Instruction Manual

16/9/4 Channel Digital Video Recorder

EDVR SERIES

EVERFOCUS ELECTRONICS CORPORATION

EDVR SERIES

Instruction Guide

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Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures :

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help. FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the users's authority to operate this equipment. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

CE Declaration

This equipment has been tested and found to comply with the limits for a **CE Class A** digital device.

The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

In a domestic environment this product may cause radio interference. In which case the user may be required to take adequate measures.

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Safety Warning

WARNING
To reduce risk of fire or electric shock, do not expose this appliance to rain or moisture.

CAUTION
Do not remove cover. No user serviceable parts inside. Refer servicing to qualified service personnel.

Note:
This equipment has been tested and found to comply with the limits for a Class A digital device,
The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note:
This is a class A product. In a domestic environment this product may cause radio interference
In which case the user may be required to take adequate measures.

Notice:

The information in this manual was current when published.
The manufacturer reserves the right to revise and improve its products.
All specifications are therefore subject to change without notice.

Safety Precautions

- Refer all work related to the installation of this product to qualified service personnel or system installers.

- Do not block the ventilation opening or slots on the cover.

- Do not drop metallic parts through slots. This could permanently damage the appliance? Turn the power off immediately and contact qualified service personnel for service.

- Do not attempt to disassemble the appliance. To prevent electric shock, do not remove screws or covers. There are no user-serviceable parts inside. Contact qualified service personnel for maintenance. Handle the appliance with care. Do not strike or shake, as this may damage the appliance.

- Do not expose the appliance to water or moisture, not try to operate it in wet areas. Do take immediate action if the appliance becomes wet. Turn the power off and refer servicing to qualified service personnel. Moisture may damage the appliance and also cause electric shock.

- Do not use strong or abrasive detergents when cleaning the appliance body. Use a dry cloth to clean the appliance when it is dirty. When the dirt is hard to remove, use a mild detergent and wipe gently.

- Do not overload outlets and extension cords as this may result in a risk of fire or electric shock.

- Do not operate the appliance beyond its specified temperature, humidity or power source ratings. Do not use the appliance in an extreme environment where high temperature or high humidity exists. Use the appliance at temperature within indoor type DVR for $0^{o}C$ ~ $+40^{o}C$ and a humidity below 90%. The input power source for this appliance is AC100~240V.

Safety Precautions

- **Read Instruction**
  All the safety and operating instructions should be read before the unit is operated.

- **Retain Instructions**
  The safety and operating instructions should be retained for future reference.

- **Heed Warnings**
  All warnings on the unit and in the operating instructions should be adhered to.

- **Follow Instructions**
  All operating and use instructions should be followed.

- **Cleaning**
  Unplug the unit from the outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning

- **Attachments**
  Do not use attachment not recommended by the product manufacturer as they may cause hazards.

- **Water and Moisture**
  Do not use this unit near water-for example, near a bath tub, wash bowl, kitchen sink, or laundry tub, in a wet basement, near a swimming pool, in an unprotected outdoor installation, or any area which is classified as a wet location.

- **Servicing**
  Do not attempt to service this unit by yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

- **Power Cord Protection**
  Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, playing particular attention to cords and plugs, convenience receptacles, and the point where they exit from the appliance.

- **Object and Liquid Entry**
  Never push objects of any kind into this unit through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the unit.

Chapter

1

1. Product Overview

The latest EverFocus digital video recorder generation is based on MPEG-4 compression technology, resulting in enhanced recording capacity and improved network image transmission speed with high image quality. Comprehensive features and extended event recording settings enable the almost universal application of this DVR series.

1.1 Features

- Pentaplex Operation (Live, Recording, Playback, Archiving, Remote Viewing)
- Built-in MPEG4 Codec with Configurable Quality
- Composite and VGA main outputs
- EDVR16D1/F1, EDVR9D1/F1, EDVR4D1/F1: Variable Recording Speeds Up to 120/100(CIF) Pictures per second for NTSC/PAL
- EDVR16D2/F2: Variable Recording Speeds Up to 240/200(CIF) Pictures per second for NTSC/PAL
- EDVR16D3: Variable Recording Speeds Up to 480/400 (CIF) Pictures per second for NTSC/PAL
- Audio Recording capabilities
- Multiple Motion Detection Capabilities for each camera (28*22)
- Support RS485 for PTZ and/or control keyboard
- Built-in real time clock and Auto Time Synchronization with global NTP server through Internet
- F Serial (without DVD): Built-in up to Four 3.5” IDE Hard Disks can be added
- D Serial (with DVD RW): Built-in up to Two 3.5” IDE Hard Disks can be added
- Ethernet Interface for Remote Network Viewing and Controlling
- Shuttle/Jog Dial for Picture-by-Picture or Fast/Slow Viewing
- Easy-to-use User Friendly Control via Front panel keypad, Shuttle/Jog, IR remote controller (optional), and Control Keyboard (optional)
- On-Screen Menus Operations with Multi-Language Support
- Real-Time Live Display for all Cameras
- 2 USB 2.0 Interface, one for archiving and the other one for mouse usage
- Support external DVD+RW for archiving
- D Serial (with DVD RW): built-in DVD+RW for video clip exporting
- Water Mark Capabilities helps to identify purposely modification of recorded data
- USB2.0 port for video clip exporting, supports USB thumb drive
- Free DDNS server for use with dynamic IP addresses
- System diagnostic feature alerts users of HDD or system problems via Email or alarm output

1.2 Specifications

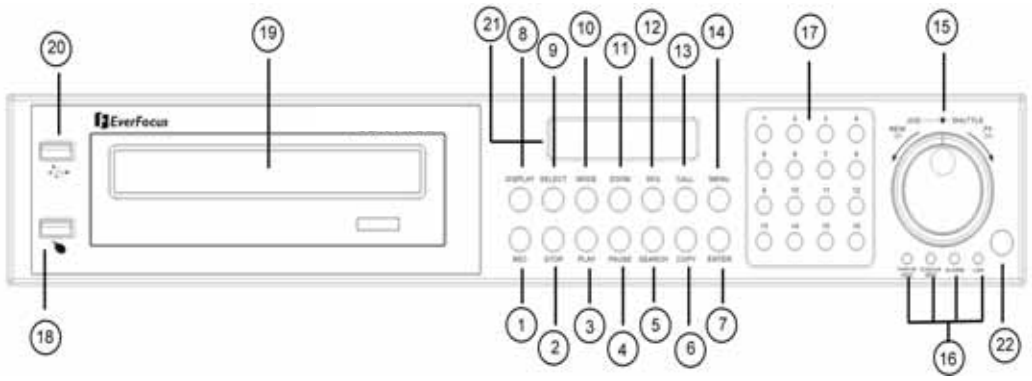
Video Format	NTSC/PAL
Video Input	16/9/4 camera inputs (BNC), 1Vp-p/75ohm
Video Output	1 BNC composite video out (1Vp-p/75ohm) for Main Monitor 1 BNC composite video out (1Vp-p/75ohm) for Call Monitor
Video Compression	MPEG4
Recording Resolution	Full-D1: 720x480 (NTSC) / 720x576 (PAL) Half-D1: 720x240 (NTSC) / 720x288 (PAL) CIF: 360x240 (NTSC) / 360x288 (PAL)
Video Display	Full, 4,7, 9,10,13,16, PictureInPicture (Live only) and 2x2 Zoom for Live and Playback
Video Pause	Yes
Video Loss Detection	Yes
Alarm Inputs	16 Alarm Inputs
Alarm Outputs	1 set of alarm output
Hard Disk Storage	F series: up to 4 internal 3.5” IDE Hard Disks D series: up to 2 internal 3.5” IDE Hard Disks
External Storage	Provide USB2.0: for external USB Flash Memory / for external DVD RW (Everfocus EPR200) D series: D(DVD) series has one built-in 3.5” DVD RW
Recording Rate	Please refer to ***Note*** at the following page
Recording Mode	Normal, Schedule or Event recording (Motion, Video Loss, Alarm)
Playback Rate	Up to 60/50 Images per second for NTSC/PAL
Playback Search	By Date/Time or Event (Alarm, Video Loss, Motion)
Playback	Play, pause, stop, fast forward (x2, x4, x8, x16, x32, x600), step forward, fast backward (x2, x4, x8, x16, x32, x600), step backward
Motion Detection	Yes, with multiple configurable detection area (28x22) & different sensitivities for each camera
Event Log	Yes
User Interface	User friendly OSD Menu Driven
Setup	On screen display setup
User Input Device	Front panel keypad, Shuttle/Jog, Control Keyboard, Remote Control (optional), USB mouse (optional)
Timer	Built-in real time clock and Auto Time Synchronization with global NTP server through Internet
Watch Dog Timer	Yes
Title	12-characters title for each camera

VGA	Yes
USB	Yes, 2 x USB2.0 interface device. 1 for archiving & 1 for mouse.
Ethernet	Yes, RJ45 connectors for network communication
Archive	USB for archiving
RS-485	for PTZ and/or control keyboard
Power Source	AC 100~240V
Power consumption	F:70W; D:50W
Dimension	Full size: 430mm (W) x 402.5mm (D) x 72mm (H)
Weight	6.42 KG
Operating Temperature	$0^{o}C$ ~ $+40^{o}C$

*** NOTE ***

Recording Rate / **Model**	NTSC		PAL	
EDVR16D1/F1 EDVR9D1/F1 EDVR4D1/F1	**D1** **Half D1** **CIF**	720x480 : 30 IPS 720x240 : 60 IPS 360x240 : 120 IPS	**D1** **Half D1** **CIF**	720x576 : 25 IPS 720x288 : 50 IPS 360x288 : 100 IPS
EDVR16D2 EDVR16F2	**D1** **Half D1** **CIF**	720x480 : 60 IPS 720x240 : 120 IPS 360x240: 240 IPS	**D1** **Half D1** **CIF**	720x576 : 50 IPS 720x288 : 100 IPS 360x288 : 200 IPS
EDVR16D3	**D1** **Half D1** **CIF**	720x480 : 120 IPS 720x240 : 240 IPS 360x240 : 480 IPS	**D1** **Half D1** **CIF**	720x576 : 100 IPS 720x288 : 200 IPS 360x288 : 400 IPS

1.3 Front Panel Keypads



Keys:

① **REC**
Press this key to start instant recording.

② **STOP**
Press this key to stop recording and playing back.

③ **PLAY**
Play Back.

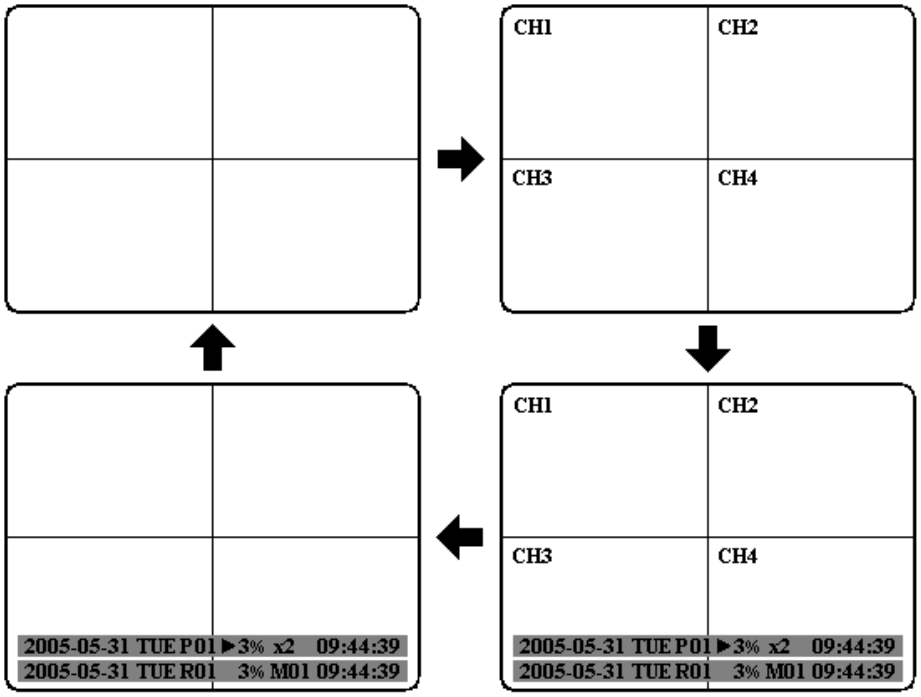
④ **PAUSE**
Press this key to pause the playback picture.

⑤ **SEARCH**
Press this key to enter the **SEARCH MENU**.

⑥ **COPY**
Pressing **COPY** key at live mode will enable you to enter COPY menu. In playback mode, the current playback position is stored as image export start position.

⑦ **ENTER**
Press this key to enter items, or jump to next subentry in the menu setting.

⑧ **DISPLAY**
Press this key to switch display of channels, display color of channels (Black, Red, Yellow, Pink, Blue and White are available as choices) and/or status bar.



⑨ **SELECT**

Press this key to select, to assign a camera to a display, to adjust screen display, and so on.

⑩ **MODE**

Switch PIP, 4, 7, 9, 10, 13 and 16 displays in **Live** and **Playback** modes.

⑪ **ZOOM**

In full screen mode, 2x electronic zoom. Zoom screen can be moved through **JOG. Enter** key changes the direction. Further zoom key actuation switches the electronic zoom off.

In multiscreen mode: Image orientation adjustment. Use the **JOG** to adjust the image to the respective monitor type. **ENTER** switches between horizontal and vertical adjustment.
Further **ZOOM** key actuation switches the adjustment off.

⑫ **SEQ**

Press this key to enter the auto sequential switching mode.

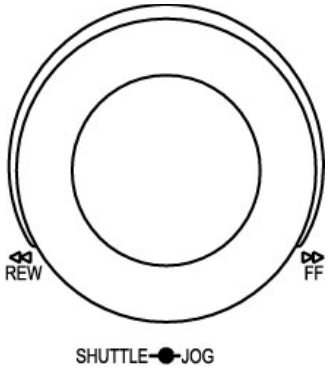
⑬ **CALL**

Press this key to enter and set up **CALL MENU**.

⑭ **Menu**

Press this key to enter or quit **MAIN SETUP MENU.**

⑮ **Shuttle and Jog Dial**



Shuttle:

In the **Playback** mode, turn the **Shuttle** dial to fast forward/rewind the video.
In the **Pause** mode, turn the **Shuttle** dial to slow forward/rewind the video.
In the event list, turn the **Shuttle** to change pages.

Jog Dial:

In the **Pause** mode, turn the **Jog** dial to forward/rewind the video. In the **Menu** mode, turn the **Jog** dial to change settings and values in subentries.

⑯ **System LEDs**

LEDs for system active **HDD**, **ALARM** and **LAN** display.

Note: External HDD LED will only be light on for EDVR16D3 model.

⑰ **Channel Key (1~16)**

Press channel key (**CH1~CH16**) to display video image in the full screen format, the corresponding picture will fill the whole screen of the monitor display.

⑱ **Mouse**

For connecting the mouse.

⑲ **DVD-RW Burner**

DVD-RW burner (only available for D series).

⑳ **USB Slot**

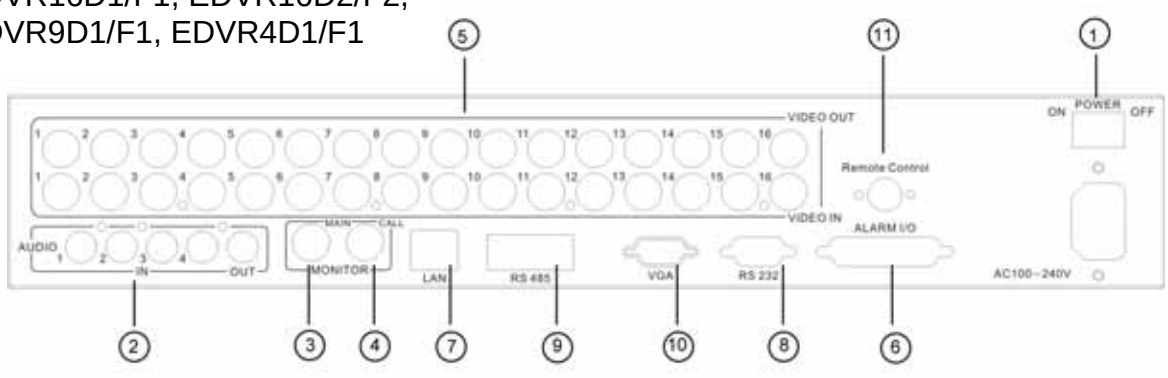
USB port allows you to archive files into your storages.

㉑ **LCD Panel**
To display Date and Time, and other system information.

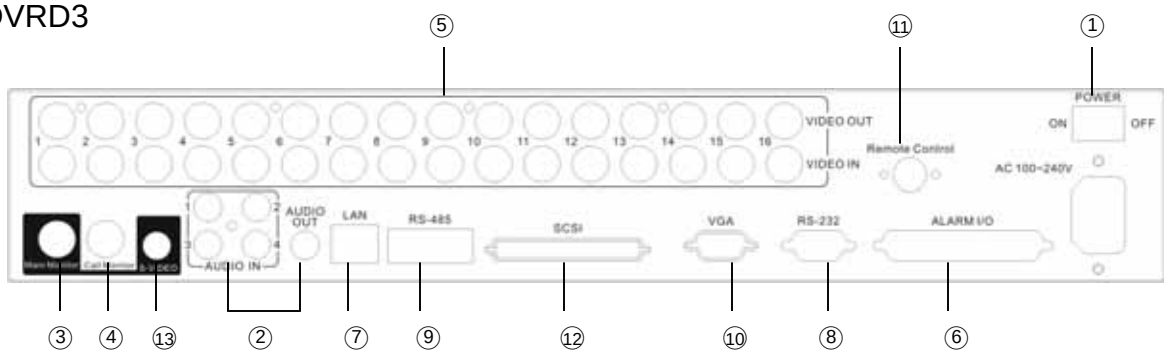
㉒ **Remote Control**
IR remote control receiver.

1.4 Back Panel Connections

For models:
EDVR16D1/F1, EDVR16D2/F2,
EDVR9D1/F1, EDVR4D1/F1



For model:
EDVRD3



POWER

① **Main Power plug**
Connect power jack (AC 100~240V).

② **Audio IN**
Audio inputs 1~4 for recording, and it can be enabled by setting to "**YES**" or "**NO**" in the **RECORD SETUP MENU.**
Audio OUT
Connect an audio output to a monitor or other device. Audio 1 corresponds to CH 1, audio 2 corresponds to CH 2, audio 3 corresponds to CH 3 and audio 4 corresponds to CH 4.

MONITOR

③ **MAIN MONITOR**

This connector is used for the main monitor display, a number of different display modes may be selected for viewing.

④ **CALL MONITOR**

This connector is used for the call monitor. This monitor can only display a full screen, but not able to enter Setup Menu.

VIDEO IN

⑤ **16 CH:**

VIDEO OUT (1~16): BNC connectors for video looping out 1~16.
VIDEO IN (1~16): BNC connectors for video input 1~16.

9 CH:
VIDEO OUT (1~9): BNC connectors for video looping out 1~9.
VIDEO IN (1~9): BNC connectors for video input 1~9.

4 CH:
VIDEO OUT (1~4): BNC connectors for video looping out 1~4.
VIDEO IN (1~4): BNC connectors for video input 1~4.

ALARM INPUT/OUTPUT

⑥ **ALM-INPUT**

Normal open or normal close type alarm signal inputs.
The Alarm Input can be selected as normal open (**N.O.**) or normal close (**N.C.**) input in the **ALARM SETUP MENU**. When an alarm occurs, alarm recording will automatically start.
ALM-OUTPUT: A built-in relay offers 3 nodes which are **ALM-COM** (common), **ALM-NO** (normal open) and **ALM-NC** (normal close) for external use.
Note: Please check **APPENDIX C** to see other available alarm input/output functions.

LAN

⑦ **LAN Connector**

The RJ-45 LAN connector.

RS232

⑧ **RS232 connector**
9-pin Sub-D control input/output for service purpose.

RS485

⑨ **RS485 connector**
RJ 45 Connector to cascade multi Digital Video Recorder.

VGA

⑩ **VGA**
Connect to the monitor that has VGA input.

Remote Control (extension cable is optional)

⑪ **Remote Control**
Connector to connect IR extension cable that has an IR remote control receiver.

SCSI (Only available for EDVR16D3)

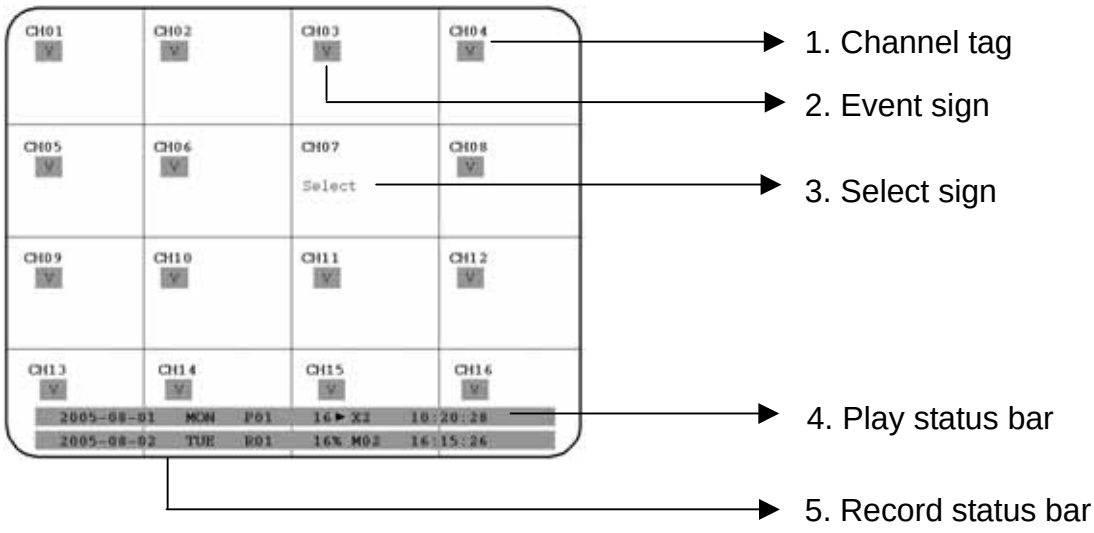
⑫ **SCSI Connector**
For connecting the optional extension unit.

S-Video (Only available for EDVR16D3)

⑬ **S-Video**
Provides S-Video connector.

1.5 Monitor Display

The status information of the cameras or machine will show up, and be located at different places on the screen.



① **Channel tag**
A channel tag indicates the channel name of the screen.

② **Event sign**
Event signals which are small icons with a capital letter and red background show the events on each screen. There are totally 6 different signals which are:

A Alarm event.
The alarm place where the camera locates. In order to show the camera video to a corresponding alarm, setting a **FOCUS CAMERA** in **ALARM SETUP MENU** is necessary.

M Motion event.
Motion event only shows up when the camera's **MOTION** is enabled in **MOTION SETUP MENU**, and the camera detects a motion.

V Video loss event.
Video loss event only shows when the camera's **VLOSS** is enabled in **VLOSS SETUP MENU**, and the camera signal is lost.

S Sequence sign.
Sequence sign shows up when the display is in the sequence mode.

The sequence display is located on display with a "∗" sign in the last display of the screen. The **S** sign will replace "∗" sign in the display when sequence occurs.

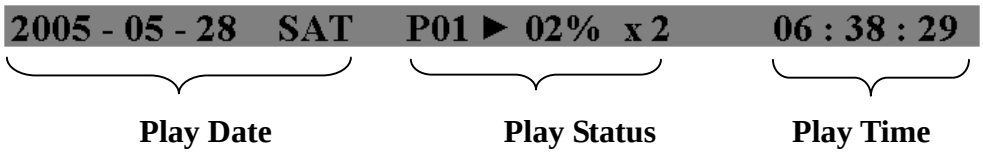
Note: Sequence is invalid when the multiscreen display can show all the cameras.

T Temperature indication.
When HDD's temperature is overheated.
Overheat temperature is determined in **HDD TEMPERATURE** of **WARNING SETUP MENU**.

F Fan fail indication.
When the fan fails to work normally.

③ **Select sign:** You can assign a camera to a display by pressing **SELECT** key in live mode. Dial **Jog** to move the select sign to the display you would like to change camera, and then press channel key from the Channel Panel to relocate the camera.

④ **Play status bar:** The play status bar appears in play back mode if you enable a status bar on the screen (Please see **DISPLAY,** 8th item of **Front Panel Keypads**). Three parts that are **play date**, **play time** and **play status** will be shown in the play status bar.



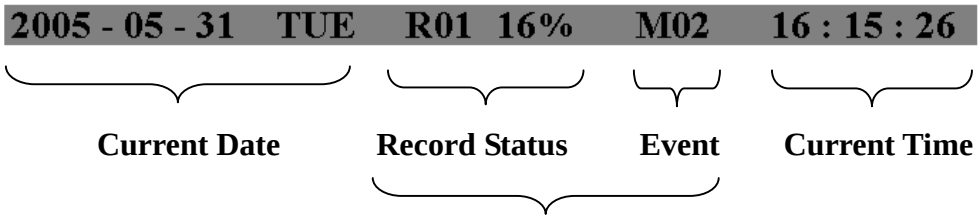
1. **Play date**
   The play date in which the video is recorded.

2. **Play status**
   It shows PAUSE, play speed and reverse play speed.
   "**PAUSE**", when the video play is paused.
   "**>**" means normal play speed;
   "**<**" means normal reverse play speed;
   "**>> x N**" means N time fast play speed;
   "**<< x N**" means N time fast reverse play speed.

3. **Play time**
   The play time at which the video is recorded. The time format depends on the time format setting in the **TIME/DATE SETUP MENU.**

⑤ **Record status bar**

The record status bar appears when you enable a status bar on the screen (Please see 8th item of **DISPLAY**). Three parts which are current date, record status (% of space used for recording) and current time.



1. **Current date**
   The current date which is set in the **TIME/DATE SETUP MENU**.

2. **Record status**
   In case of activated recording, “R” + current HDD no, is displayed “**R01**”: R - Record, figure shows the currently recording HDD no., here: No.1.

3. **Event**
   The last happened event.

4. **Current time**
   The current time which is set in the **TIME/DATE SETUP MENU.**

5. **HDD/Fan status“No Disk”**, it shows when no disk is installed or detected.
   “No Fan”, it shows when cooling fan stops working.
   “HDD OT”, HDD over temperature

Chapter

2

2. Installation

The installations described below should be done by qualified service personnel or system installers.

2.1 Packing

Please check accessories in the packing before the installation.

2.2 System Floorplan

Please refer to the following diagrams for the system connections.

Note: Monitor and Camera must be purchased separately.

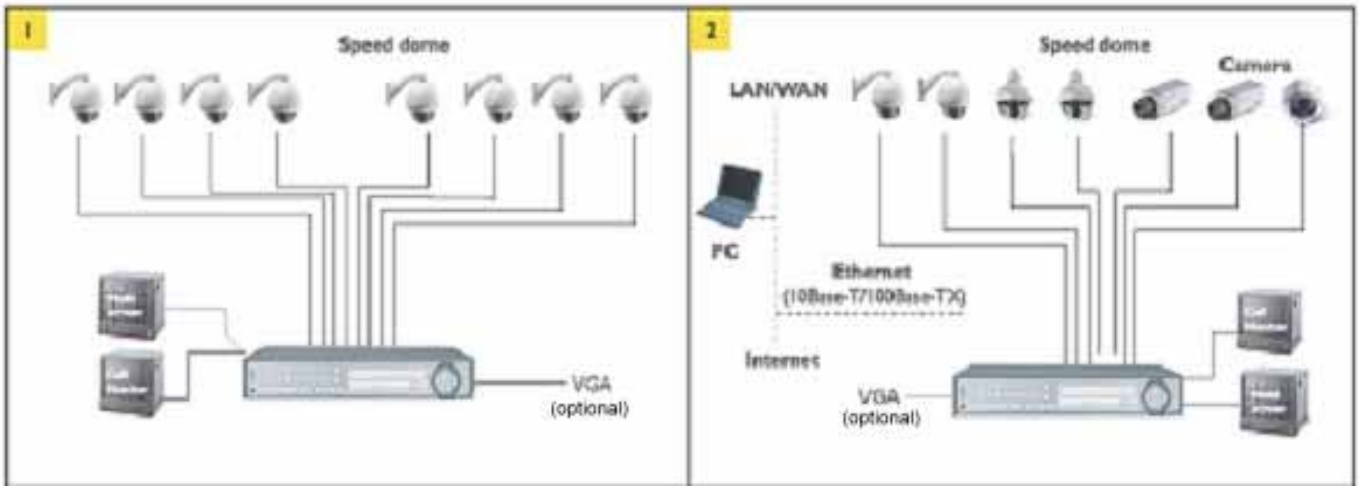


Diagram 2.1

2.3 Basic Wiring Instructions

1. **Power**
   Connect the power source or adapter into the power socket.

2. **Cameras**
   Connect each cameras video output to the video input on the digital video recorder shown in diagram 2.1.

   Note: At least one camera (CH 1) must be connected before the system is running for the auto detection of video standard to take effect.

3. **Audio Input**
   The camera audio output or Microphone is connected to the audio input terminal at the rear panel.

4. **Audio Output**
   Connect the speaker or other audio listening devices to the audio output terminal on the back of the digital video recorder.

5. **Ethernet**
   The digital video recorder may be viewed from a PC via the LAN connector using a RJ45 Ethernet cable.

6. **RS232**
   9-pin Sub-D control input/output for service purpose.

7. **RS485**
   The digital video recorder can be controlled from a keyboard or a speed dome via RS485.

   Note: This can be done using a serial cable.

8. **Main Monitor**
   Connect the main monitor output connector to a main monitor. The main monitor displays selected live or recorded cameras in any available format.

   Note: The main monitor must be connected in order to make configuration changes, enter the main menu, or do a playback at the machine.

9. Call Monitors

Connect the call monitor output connectors to a call monitor. The call monitor display selected live cameras in full screen format.

Note: The call monitor will only display one full screen camera at a time.

2.4 Final Install Process

Once you have completed the basic wiring installation and the hard disk drive installation you are ready to turn on the DVR. Simply plug the power source you installed earlier. The POWER LED lights will light up if power is normal. The next step is to set up the menu options for the DVR.

Chapter

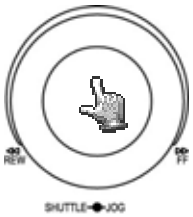
3

3. DVR Menu Setup

Assuming you have completed the first two chapters of this manual. You are now ready to begin setting up the digital video recorder. The following chapter will walk you through the detailed DVR Menu step by step and how to set the DVR for your specific application. To begin this process, press the **MENU** key. Once inside the main menu you will find there are 12 setup option pages as follows.

MENU

Press the **MENU** key to enter the **MAIN MENU**.
Press the **MENU** key to quit current setting, and go back to last setting.



Dial the **Jog** clockwise or counterclockwise to change subentry values.
Press the **ENTER** key to go next subentry in a menu setting, and press the **CALL** key to go last subentry in a menu setting.

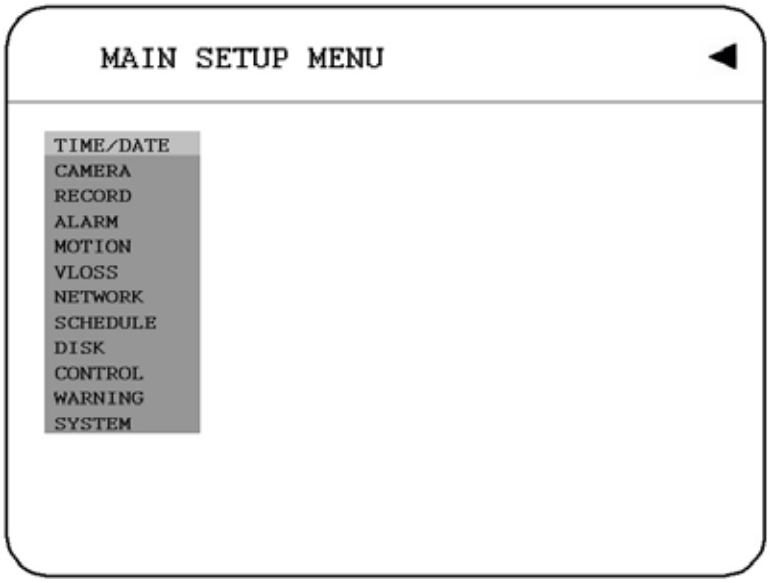


Diagram 3.1

3.1 Time/Date Setup Menu

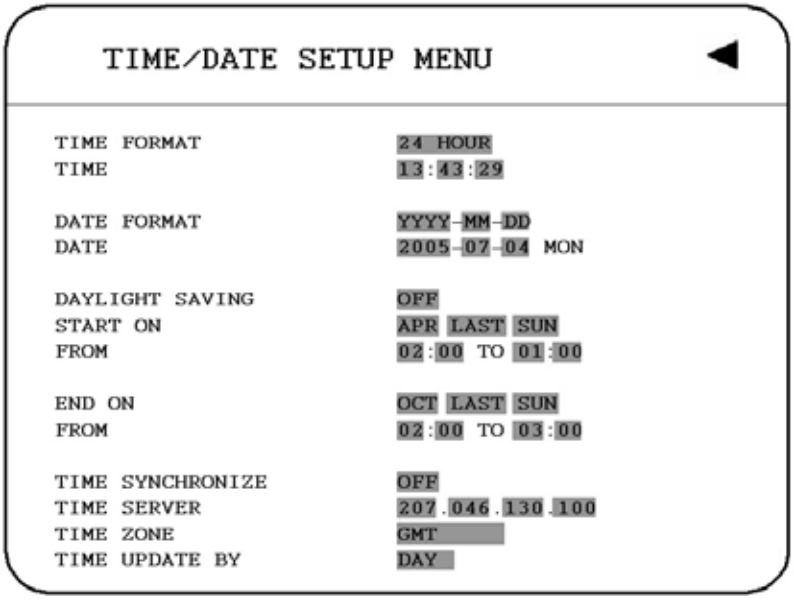


Diagram 3.2

Diagram 3.2 is a screen shot of the **TIME/DATE SETUP MENU**. This menu is used to set up the correct time and date for your region of the world. You are able to setup daylight savings as well as synch it with an internet based time server. In the **TIME/DATE SETUP MENU** the following fields are defined as follows:

1. TIME FORMAT

This field represents the time format on the DVR. There are two time formats that are **12 HOUR** and **24 HOUR** to be selected.

2. TIME

This field represents the current time on the DVR. To change this, simply use the Jog Dial on the DVR.

The Time is represented as follows:

Hour: 00~23: Minute: 00~59: Second: 00~59 (1 ~ 12 if TIME FORMAT is 12 HOUR)

3. DATE FORMAT

This field represents the date format on the DVR. To change this, simply use the Jog Dial on the DVR. There are three date formats which are **YYYY-MM-DD**, **MM-DD-YYYY** and **DD-MM-YYYY** to be selected.

4. DATE

This field represents the date on the DVR. To change this, simply use the Jog Dial on the DVR. There are three date formats which are **YYYY-MM-DD**, **MM-DD-YYYY** and **DD-MM-YYYY** to be selected.

The date is represented as follows:

Year: 2000~2037 / Month: 01~12 / Date: 01~31 (Day of Week)

5. DAYLIGHT SAVING

This field represents the daylight savings on the DVR. To change this, simply use the Jog Dial on the DVR. Select "**ON**" or "**OFF**" to enable or disable daylight saving time function. In order to set a daylight saving time zone, you need to disable daylight saving first. Enable the daylight saving after finish setting the time zone.

6. START TIME

To set the start time of daylight saving time.

To set the start month of daylight saving time: Dial the jog to set the start month.

To set the start week of daylight saving time: Dial the jog to set the start week.

To set the start date of daylight saving time: Dial the jog to set the start date.

To set the start time of daylight saving time: To set the start "**FROM**" time and "**TO**" time of daylight saving time.

7. END TIME

To set the end time of daylight saving time.

To set the end month of daylight saving time: Dial the jog to set the end month.

To set the end week of daylight saving time: Dial the jog to set the end week.

To set the end date of daylight saving time: Dial the jog to set the end date.

To set the end time of daylight saving time: To set the end "**FROM**" time and "**TO**" time of daylight saving time.

8. TIME SYNCHRONIZE

Select "**ON**" or "**OFF**" to enable or disable time synchronize which can let you have correct time automatically when network is connected. To change this, simply use the Jog Dial on the DVR.

9. TIME SERVER

You can set the time server address where you locate if you connect to network and enable time synchronize. For checking the IP address of NTP Server, please follow the steps:

a) Connect your PC to internet for searching the IP address of NTP Server.
b) Go to "START" -> "RUN" -> type "Command" and press "OK".

Under Dos Prompt, type “C:\Ping Pool.NTP.ORG to find out the IP address of NTP Server.

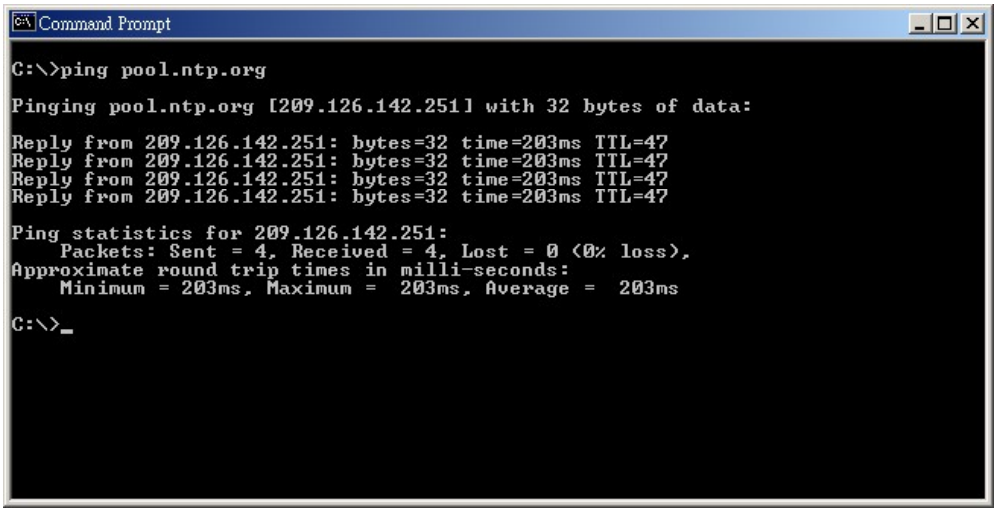

Command Prompt
C:\>ping pool.ntp.org
Pinging pool.ntp.org [209.126.142.251] with 32 bytes of data:
Reply from 209.126.142.251: bytes=32 time=203ms TTL=47
Reply from 209.126.142.251: bytes=32 time=203ms TTL=47
Reply from 209.126.142.251: bytes=32 time=203ms TTL=47
Reply from 209.126.142.251: bytes=32 time=203ms TTL=47
Ping statistics for 209.126.142.251:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 203ms, Maximum = 203ms, Average = 203ms
C:\>

Diagram 3.3

10. TIME ZONE

You can set the time zone where you locate if you connect to network and enable time synchronize.

Atlantic Daylight Time subtract 3 hours from GMT
Atlantic Standard Time subtract 4 hours from GMT
Eastern Daylight Time subtract 4 hours from GMT
Eastern Standard Time subtract 5 hours from GMT
Central Daylight Time subtract 5 hours from GMT
Central Standard Time subtract 6 hours from GMT
Mountain Daylight Time subtract 6 hours from GMT
Mountain Standard Time subtract 7 hours from GMT
Pacific Daylight Time subtract 7 hours from GMT
Pacific Standard Time subtract 8 hours from GMT
Alaska Daylight Time subtract 8 hours from GMT
Alaska Standard Time subtract 9 hours from GMT
Hawaii-Aleutian Daylight Time subtract 9 hours from GMT
Hawaii-Aleutian Standard Time subtract 10 hours from GMT

11. TIME UPDATE BY

Once you enable the **TIME SYNCHRONIZE**, you can select the synchronization frequency by:

DAY WEEK MONTH

3.2 Camera Setup Menu

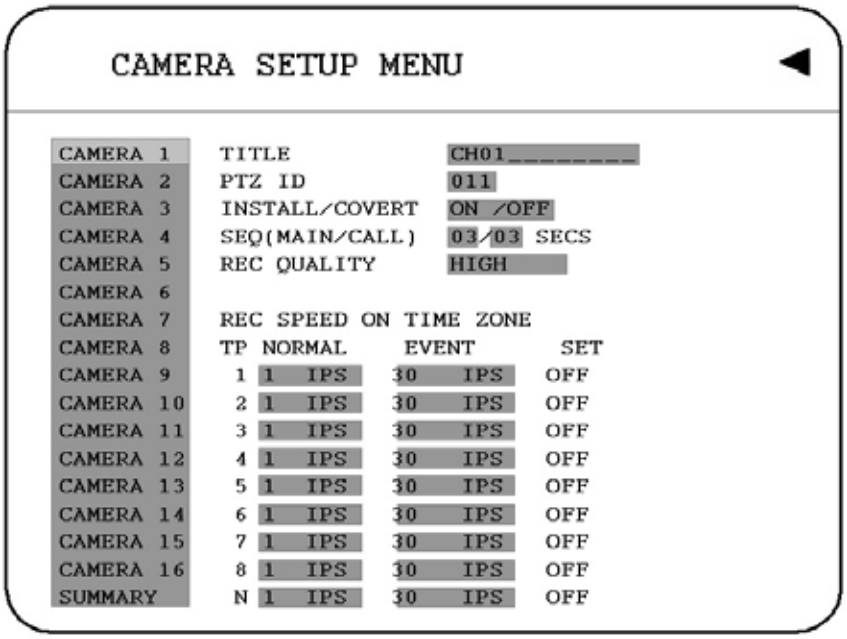


Diagram 3.4

Diagram 3.4 is a screen shot of the **CAMERA SETUP MENU**. This menu will walk you through setting up the Camera Recording Speeds, Camera titles, PTZ ID, covert modes, and recording quality. In the **CAMERA SETUP MENU** the following fields are defined as:

1. TITLE

The title setting allows you to assign a title to each camera input. Titling with 12 characters is supported in each channel. To change this, simply use the Jog Dial on the DVR. The available alphanumeric characters are:

0,1,2,3,4,5,6,7,8,9,
A,B,C,D,E,F,G,H,I,J,K,L,M,N,O,P,Q,R,S,T,U,V,W,X,Y,Z,
( ) . , + - / and an empty space.

2. PTZ ID

Select PTZ ID/Address from 001~255 or OFF. The default value is 10+N where N is camera's number. This ID must be the same as the ID used in PTZ Dip Switch. To change this, simply use the Jog Dial on the DVR.

3. INSTALL/COVERT

For installation of camera; select “ON” to enable a camera, and “OFF” to disable it. Please make sure to stop recording before making change of **INSTALL**. To take full advantage of the record resource, switch the Uninstalled Camera Ports to OFF in this section. For **COVERT**, select “ON” to cover a camera, and disable the screen in live mode to show up. However, the image is recorded, and can be played back by user who has playback right. The covert channels will not show up on the sequence mode. To change this, simply use the Jog Dial on the DVR.

4. SEQ (MAIN/CALL)

Setup a retention period for sequences. To change this, simply use the Jog Dial on the DVR.

5. REC QUALITY

Select an image quality for recording. Normal record image quality and event record image quality can be set individually. There are six different qualities available. A higher image quality needs more HDD space. To change this, simply use the Jog Dial on the DVR. The theory space needed per second lists below:

720x480		Video Source	
		Simple:	Complex:
Average size per image	Lower:	8.04KB	12.33KB
	Low:	8.42KB	13.7KB
	Basic:	10.15KB	16.72KB
	Standard:	11.86KB	19.56KB
	High:	14.72KB	24.63KB
	Superior:	18.60KB	30.05KB
720x240		Video Source	
		Simple:	Complex:
Average size per image	Lower:	3.53KB	7.82KB
	Low:	3.87KB	8.36KB
	Basic:	4.21KB	8.9KB
	Standard:	4.92KB	9.54KB
	High:	5.62KB	10.17KB
	Superior:	6.41KB	12.89KB
360x240		Video Source	
		Simple:	Complex:
Average size per image	Lower:	1.76KB	4.56KB
	Low:	1.87KB	4.87KB
	Basic:	1.97KB	5.46KB
	Standard:	2.38KB	6.51KB
	High:	2.67KB	7.08KB
	Superior:	3.63KB	9.02KB

Note: Since the compression ratio of MPEG4 fully depends on the variation and complexity of the recorded video, the table above is for your reference only.

6. REC SPEED ON TIME PERIOD:

TP

Scheduled recording time 1~8 which can be set in the **SCHEDULE SETUP MENU.** "N" in the column of "TP" is the normal recording time.

NORMAL

IPS recording rate for manual or scheduled recording and recording controlled through "REC IN" input contact. The maximum image rate is limited to:

Max. image rate per camera = max. DVR recording rate / number of installed cameras.

Max. DVR recording rate depends on recording resolution:

Model	Resolution (N/P)	IPS (N/P)
D1/F1	360 x 240 / 360 x 288	120/100
	720 x 240 / 720 x 288	60/50
	720 x 480 / 720 x 576	30/25
D2/F2	360 x 240 / 360 x 288	240/200
	720 x 240 / 720 x 288	120/100
	720 x 480 / 720 x 576	60/50
D3	360 x 240 / 360 x 288	480/400
	720 x 240 / 720 x 288	240/200
	720 x 480 / 720 x 576	120/100

Example:

EDVR9F1/D1 with 12 installed cameras, resolution 720 x 240: 60 IPS / 12 = 5 IPS, therefore the maximum adjustable recording rate per camera is 5 IPS.

EVENT

Event record speed (Images per second) up to 30/25 IPS or "**OFF**".

Note: In order to validate a new record speed, you need to disable all record actions before setting up.

SET

Set "**ON**" when using schedule recording.

Set "**OFF**" when not using schedule recording.

Note: The status of SET can only be changed in the SCHEDULE SETUP MENU.

7. SUMMARY

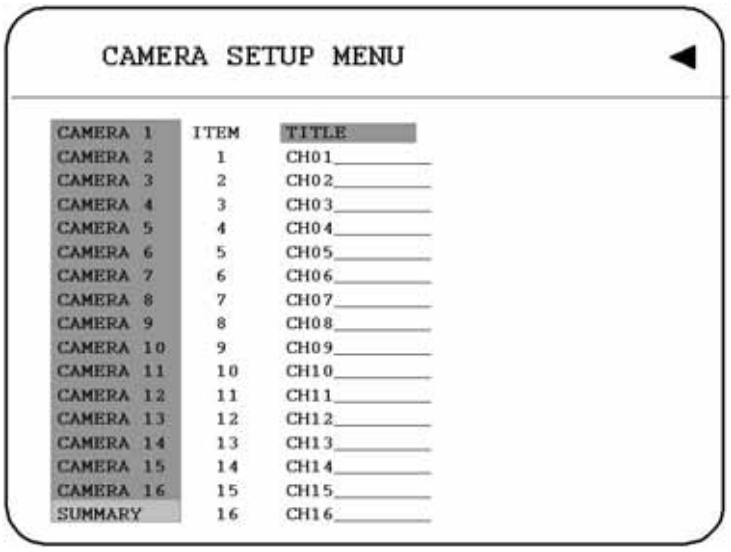


Diagram 3.5

Dial **Jog** to change items in the **SUMMERY** table.

All cameras' statuses are shown in the **SUMMARY** table. The table is for checking camera overall statuses only, not for setting.

Note: The SUMMARY table also exists in ALARM, MOTION and VLOSS SETUP MENU. All of these SUMMARY tables are also for checking particular overall statuses, not for setting.

8. Copy camera's setting from a camera to other cameras

In order to copy the setting from a camera to other cameras, we provide a setting copy function. Press **MENU** when you finish setting up a camera, and then press **COPY**. A **COPIED** sign will show up on the top right corner of the screen, and it means the setting has been copied. Dial the **Jog** to the camera you would like to copy, and then press **SEARCH** to paste. The previous setting of the camera will be covered, and a **PASTED** sign will show up.

Note: TITLE, PTZ ID, INSTALL/COVERT cannot be copied. These 3 options need to be set independently.

3.3 Record Setup Menu

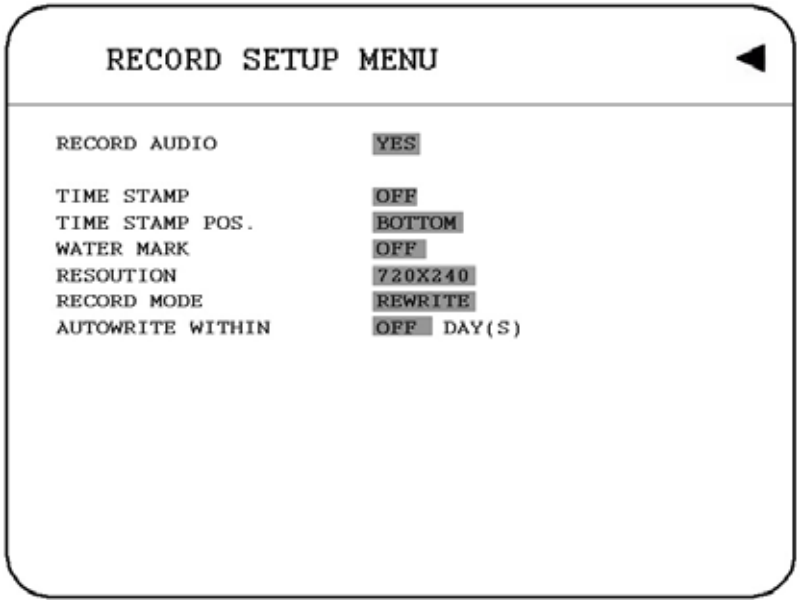


Diagram 3.6

Diagram 3.6 is a screen shot of the **RECORD SETUP MENU**. This menu is for setting up the options for recording. We define recording as something on which sound or visual images have been recorded. In the **RECORD SETUP MENU** the following fields are defined as follows:

1. RECORD AUDIO

YES: Audio will be recorded when machine is recording.

NO: Audio will not be recorded when machine is recording.

2. TIME STAMP

ON: The time stamp will be recorded on the video and picture when recording.
OFF: The time stamp will not be recorded on the video and picture when recording.

3. TIME STAMP POSITION

BOTTOM: The time stamp will be recorded on the bottom.
TOP: The time stamp will be recorded on the top.

4. WATER MARK

ON: Recording is overlaid by a visible watermark ("W").
OFF: No watermark.

5. RESOLUTION

The resolutions for NTSC are 720x480, 720x240 and 360x240 to be selected. Its default value is 720x240. The resolutions for PAL are 720x288, 720x576 and 360x288 to be selected. Its default value is 720x288.

NOTE: Selecting a certain resolution will determine the amount of IPS the DVR will support.

Model	Resolution (N/P)	IPS (N/P)
D1/F1	360 x 240 / 360 x 288	120/100
	720 x 240 / 720 x 288	60/50
	720 x 480 / 720 x 576	30/25
D2/F2	360 x 240 / 360 x 288	240/200
	720 x 240 / 720 x 288	120/100
	720 x 480 / 720 x 576	60/50
D3	360 x 240 / 360 x 288	480/400
	720 x 240 / 720 x 288	240/200
	720 x 480 / 720 x 576	120/100

6. RECORD MODE

REWRITE: Continue recording. Disk will be overwritten if it is full.
STOP: Stop recording when disk is full.

7. AUTOWRITE WITHIN

You can set DVR autowrite day, so that DVR will autowrite after the day number you set. If you do not wish to use this function, please set it OFF.

3.4 Alarm Setup Menu

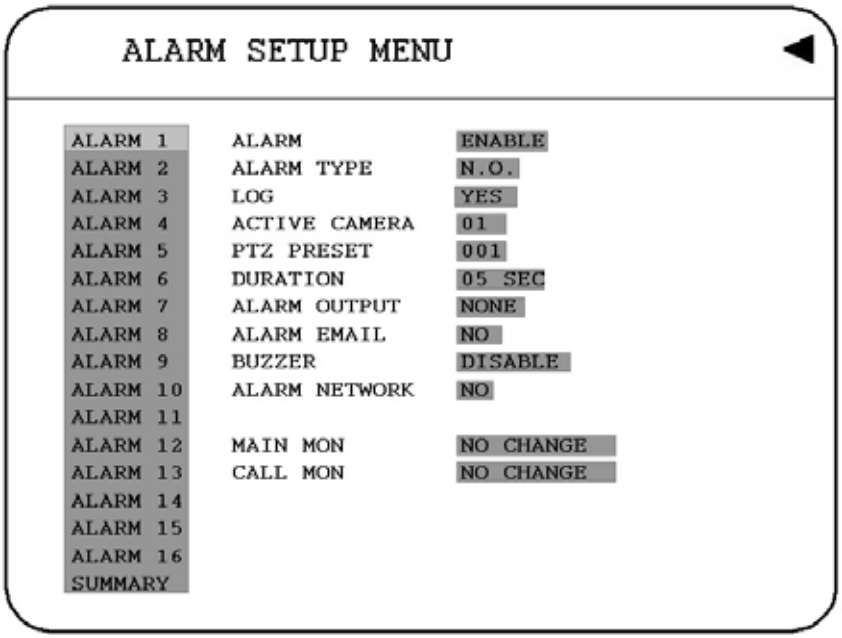


Diagram 3.7

Diagram 3.7 is a screen shot of the **ALARM SETUP MENU**. An alarm is defined as an electrical, electronic, or mechanical device that serves to warn of danger by means of a signal. In this case the signal triggers the recorder to start recording the alarmed event. This menu contains all the alarm operations and options needed to successfully complete an alarm recording. In the **ALARM SETUP MENU** the following fields are defined as:

1. ALARM

This field is to turn alarm detection ON or OFF. The default value is ON. To change this, simply use the Jog Dial on the DVR.

ENABLE: Enable alarm detection.
DISABLE: Disable alarm detection.

2. ALARM TYPE

This field is to turn alarm recording ON or OFF. The default value is ON. To change this, simply use the Jog Dial on the DVR.

N. O.: Normal Open alarm.
N. C.: Normal Close alarm.
N.O. Trans.: When the alarm is triggered, buzzer, alarm output and alarm recording start to function no matter how long the alarm duration is set until you set it back to N.O.

N.C. Trans.: When the alarm is triggered, buzzer, alarm output and alarm recording start to function no matter how long the alarm duration is set until you set it back to N.C.

3. LOG

YES: Select **YES** if you wish to record Alarm Events in the Log.
NO: Select **NO** if you do not wish to record Alarm Events in the Log.

4. ACTIVE CAMERA

This field is to activate camera you want to have the alarm enabled too. For example if you had an external motion detector on camera one you would set this option to camera one. The Default from the factory is set to on. To change this, simply use the Jog Dial on the DVR.

Active camera setting, from camera 01~16. You can set the camera which corresponds to the place where the alarm is located.

5. PTZ PRESET

Select **PTZ PRESET** from "**001**" to "**255**", so that when Alarm occurs, speed dome will turn to this preset position for event recording. This function improves surveillance quality of an alarm event. If you wish to disable this function, please simply select "**OFF**".

6. DURATION

The amount of time an alarm event will record - from 1 sec to 99 seconds. The default value is 5 seconds.

7. ALARM OUTPUT

This will transmit a signal to another device. The setting of alarms are **NONE = not activated, 1 = output signal 1 transmitted, 2 = output signal 2 transmitted, 3 = output signal 3 transmitted and 4 = output signal 4 transmitted.**

Note: For D1 and D2 series, it has only 1 alarm output. For D3 series, there are totally 4 alarm outputs.

8. ALARM EMAIL

Select "**YES**" for sending an email when alarm occurs. The email address can be set in the **NETWORK SETUP MENU**.

9. BUZZER: Audible alarm buzzer.

ENABLE: To enable an alarm buzzer.
DISABLE: To disable an alarm buzzer.

10. ALARM NETWORK

YES: Enable alarm network.
NO: Disable alarm network.

11. MAIN MON: Display on a main monitor when an alarm occurs.

NO CHANGE: No change on the display in the main monitor when an alarm occurs.
FULLSCREEN: A full screen of the active camera will display when an alarm occurs.

12. CALL MON: Display on a call monitor when an alarm occurs.

NO CHANGE: No change on the display in call monitor when an alarm occurs.
SEQUENCE: Display in sequence mode on call monitor when an alarm occurs, according to sequence retention period set in Camera Setup Menu.
ACTIVE CAMERA: Display the active camera in full screen mode to the call monitor.

13. SUMMARY

Dial **Jog** to change items in the **SUMMARY** table. All alarm's statuses are shown in **SUMMARY** tables. These tables are for checking alarm overall statuses, but not for setting.

Note: Please check APPENDIX B to see other available alarm input / output functions.

3.5 Motion Setup Menu

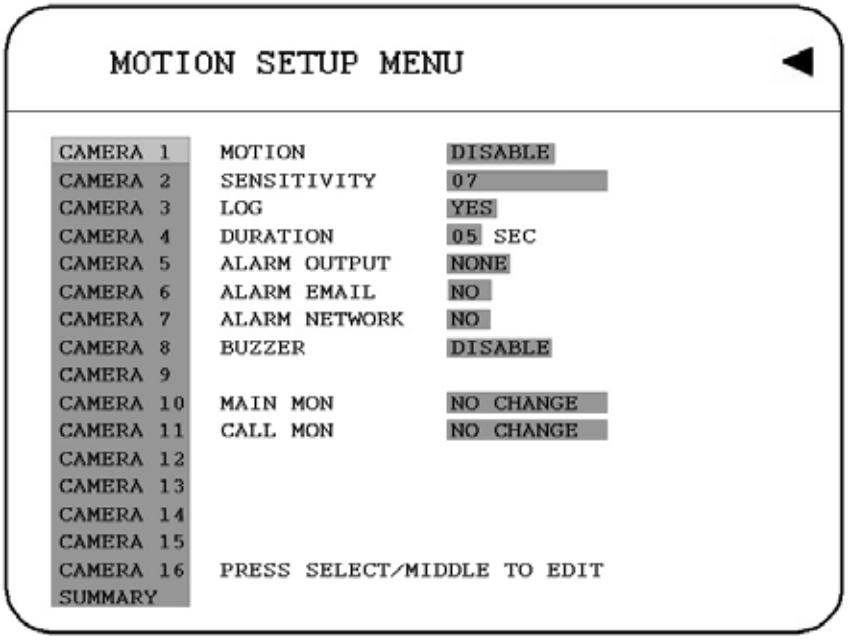


Diagram 3.8

Diagram 3.8 is a screen shot of the **MOTION SETUP MENU**. We define motion as a change of pixilation in the field of view, which is detected by the digital video recorder, and triggering the recorder to start recording. This menu is for setting up the digital recorder for motion recording on a per camera basis. In the **MOTION SETUP MENU** the following fields are defined as follows:

1. MOTION: This field is to turn motion detection ON or OFF. The default value is Disable. To change this, simply use the Jog Dial on the DVR.

ENABLE: Enable motion detection.
DISABLE: Disable motion detection.

> **Note:** Motion only works in live and playback modes. It is invalid when you are setting menus.

2. SENSITIVITY

The sensitivity allows users to adjust to a suitable motion detection sensitivity. There are 10 sensitivities available; level 1 is the lowest, and level 10 is the highest sensitivity. To change this, simply use the Jog Dial on the DVR.

3. LOG

YES: Select **YES** if you wish to record Motion Events log in the HDD.
NO: Select **NO** if you do not wish to record Motion Events log in the HDD.

4. DURATION
The amount of time a motion event will record - from 1 sec to 99 seconds. The default value is 5 seconds. To change this, simply use the Jog Dial on the DVR.

5. ALARM OUTPUT
This will transmit a signal to another device. The setting of alarms are **NONE = not activated, 1 = output signal 1 transmitted, 2 = output signal 2 transmitted, 3 = output signal 3 transmitted and 4 = output signal 4 transmitted.** To change this, simply use the Jog Dial on the DVR. (Only EDVR16D3 model has 4 alarm outputs, all the rest models have only 1 alarm output).

6. ALARM EMAIL

YES: Send an email when an alarm occurs.
NO: Do not send an email when an alarm occurs.
The email address and e-mail server can be set in the **NETWORK SETUP MENU.**

7. ALARM NETWORK

YES: Enable alarm network when an alarm occurs.
NO: Disable alarm network when an alarm occurs.
BUZZER: Audible buzzer when motion is detected.

ENABLE: To enable a motion buzzer.
DISABLE: To disable a motion buzzer.

8. MAIN MON: Display on a main monitor when an alarm occurs.

NO CHANGE: No change on the display in the main monitor when a motion occurs.
FULLSCREEN: A full screen of the active camera will display when motion occurs.

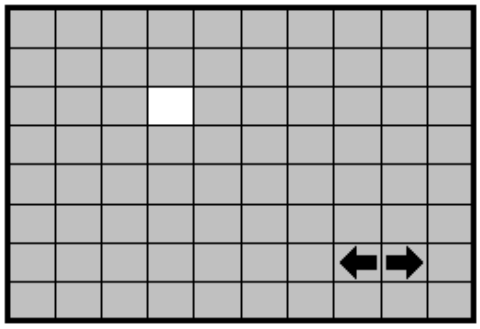
9. CALL MON: Display on a call monitor when motion occurs.

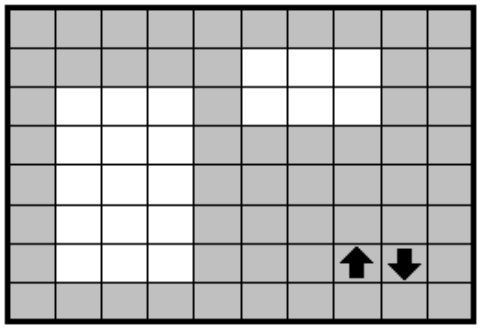
NO CHANGE: No change on the display in the main monitor when motion occurs.

ACTIVE CAMERA: Display the active camera that is set for **Motion** in full screen mode to the call monitor. **SUMMARY**

Dial **Jog** to change items in the **SUMMARY** table. All alarm's statuses are shown in **SUMMARY** tables. These tables are for checking alarm overall statuses, but not for setting.

11. Press **SELECT** to edit **MOTION AREA.** Enter a desired channel and press **SELECT** to edit a motion area. Please make sure that MOTION is set as "**Enable**" before entering the motion detection area.





In the motion edit mode:

The default motion area of each camera is entire screen which displays in light green.

Press **COPY** or left-click the mouse to start setting an area.

Press **SEARCH** to end and enable the area, or press **PAUSE** to end and disable the area. Alternatively, right-click the mouse to obtain a selection menu, select "ON" to end and enable the area and "OFF" to end and disable the area by clicking on "+" or "-" sign. Then press "OK".

Dial **JOG** to select a horizontal ⬅➡ or a vertical ⬆⬇ area to switch a horizontal ⬅➡ or vertical ⬆⬇ area.

To quit the motion area edit, press **MENU** or right-click the mouse to obtain a selection menu, select "EXIT" by clicking on "+" or "-" sign. Then press "OK".

- **To test a motion area:** Grids will turn into light red from light green when a motion is detected.
- **To clear the motion entire area:** Press **PLAY** to clear the entire motion area.
- **If you forget the motion grid commands:** Press **CALL** to get a hint window (shows below) in motion edit mode.

MENU	**- EXIT**
COPY	**- SELECT AREA**
ENTER	**- CHANGE DIR**
SEARCH	**- ON AREA**
PAUSE	**- OFF AREA**

3.6 VLoss Setup Menu

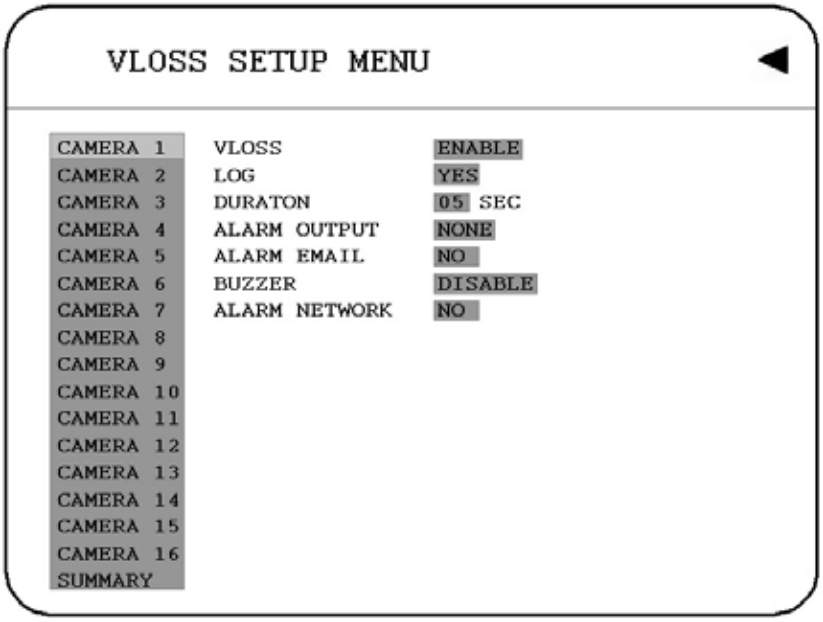


Diagram 3.9

Diagram 3.9 is a screen shot of the **VLOSS (Video Loss) SETUP MENU**. VLoss event is caused by no video signal input for the channel. Usually it happens when no power supply for the camera or the camera fails. How to set up system response for VLoss case is introduced in this section. In the **VLOSS (Video Loss) SETUP MENU** the following fields are defined as follows:

1. VLOSS:

ENABLE: Enable video loss detection.
DISABLE: Disable video loss detection.

2. LOG:

YES: Select **YES** if you wish to record Video Loss Events in the Log.
NO: Select **NO** if you do not wish to record Video Loss Events in the Log.

3. DURATION
Duration of Vloss buzzer ranges from 1 sec to 99 seconds. The default value is 5 seconds. To change this, simply use the Jog Dial on the DVR.

4. ALARM OUTPUT

This will transmit a signal to another device. The setting of alarms are **NONE = not activated, 1 = output signal 1 transmitted, 2 = output signal 2 transmitted, 3 = output signal 3 transmitted and 4 = output signal 4 transmitted.** To change this, simply use the Jog Dial on the DVR. (Only EDVR16D3 model has 4 alarm outputs, all the rest models have only 1 alarm output).

5. ALARM EMAIL

Select "**YES**" for sending an email when vloss occurs. The email address can be set in the **NETWORK SETUP MENU**.

6. BUZZER: Audible alarm buzzer.

ENABLE: To enable a vloss buzzer.
DISABLE: To disable a vloss buzzer.

7. ALARM NETWORK:

YES: Enable alarm network.
NO: Disable alarm network.

8. SUMMARY

All video loss's statuses are shown in SUMMARY tables. These tables are for checking video loss overall statuses, but not for setting.

3.7 Network Setup Menu

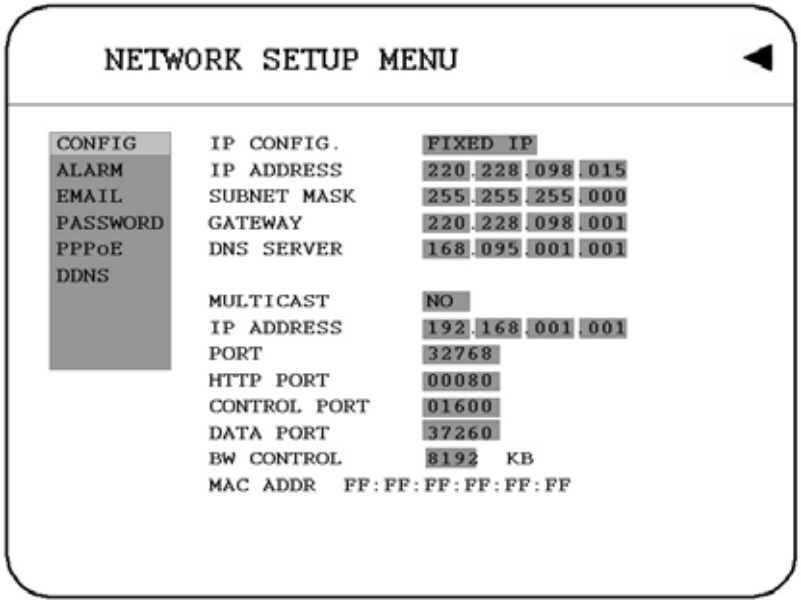


Diagram 3.10

Diagram 3.10 is a screen shot of the **NETWORK SETUP MENU**. This menu is for setting up the configurations for networking to the DVR. For more detail about network setup, please refer to CH.10~13. There are 6 subentries that are **CONFIG, ALARM, EMAIL, PASSWORD, PPPoE** and **DDNS** in the **NETWORK SETUP MENU**. Each of them has to be set up completely before the network functions. Please refer to the Networking Chapters (CH.10~13) of this manual to fully understand how to setup your network for this DVR. In the Network Setting Menu the following fields are defined as follows:

Note: Since every Network Configuration is different, please contact your Network Administrator or ISP for how to assign those IP addresses and port numbers.

3.7.1 CONFIG

In the **CONFIG** of the **NETWORK SETUP MENU,** we define:

1. IP CONFIG:

FIXED IP: User can set the fixed IP for network connection.

DHCP: DHCP server in LAN will provide the dynamic IP for network connection

PPPoE: This is a DSL connection application, ISP will ask user to input user name and password. When you choose this option, please go to PPPoE configuration menu for setting PPPoE configuration.

2. IP Address

This field is to set a static IP Address for the DVR. A static IP address is an IP address whose value does not change. It is suggested to use a static IP address. If your Internet provider does not offer a static IP address you have the option to use a dynamic IP address. For Example: A Test IP address given to the machine by our engineers is 192.168.010.002. When DHCP is YES, the DHCP server will assign this value automatically.

Note: The Addresses in the machine are for our own testing you must apply your own addresses to comply with your network. Refer to Networking Chapter for more details.

To change this, simply use the Jog Dial on the DVR.

3. SUBNET MASK

This field is to set the subnet mask for your network so as the DVR will be recognized within the network. Example: 255.255.255.000. When DHCP is YES, the DHCP server will assign this value automatically. To change this, simply use the Jog Dial on the DVR.

4. GATEWAY

This field is to set the gateway for your network so the DVR will be recognized within the network. An example of this is provided within the DVR we use to test the machine within our own network. When DHCP is YES, the DHCP server will assign this value automatically. To change this, simply use the Jog Dial on the DVR.

5. DNS SERVER

This field is to set the DNS server for your network so the DVR will be recognized within the network. An example of this is provided within the DVR we use to test the machine within our own network. Assign a DNS server to DVR, for example: 168.195.001.001. When DHCP is YES, the DHCP server will assign this value automatically. To change this, simply use the Jog Dial on the DVR.

6. MULTICAST: This is network casting, it allows DVR to multi-cast through a router and this router will route to different end pints.

YES: to enable Multicast function.
NO: to disable Multicast function.

7. IP ADDRESS

This is the router's IP address. Please input the IP address of router.

8. PORT

Port of Multicast. Please configure the port number.

9. HTTP PORT

The default port number is 80. User can change it to different port number for HTTP/WEB communication between DVR and client PC.

10. CONTROL PORT

The default port number is 1600. User can change it to different port number for controlling comment between DVR and client PC.

11. DATA PORT

The default data transmitting port number is 32760. User can change it to different port number for data transfer between DVR and client PC.

Note: If you wish to have multiple users log into the DVR please open a range of ports on your router. For example if you use the default port 32760 you would open ports 32760-32763 on your router. This will allow 4 clients to login.

12. BW CONTROL

This configuration allows user to control the bandwidth of DVR.

13. MAC ADDR

This field is for those Internet service providers or Network administrators who require a MAC address of the network card of our DVR. This option cannot be changed.

3.7.2 ALARM (NETWORK)

DVR can send out Alarm message to an Alarm Server (PowerCon4). In the **ALARM** of the **NETWORK SETUP MENU,** we define:

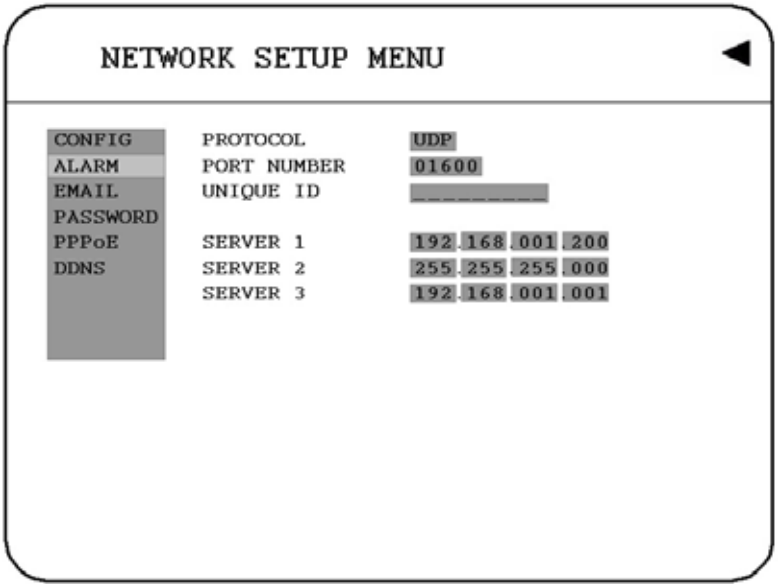


Diagram 3.11

Note: Since every Network Configuration is different, please contact your Network Administrator or ISP for how to assign those IP addresses and port numbers.

1. **PROTOCOL:** Select which communication protocol with Alarm servers or Alarm receiving clients.

   TCP: communicate with client via TCP protocol.
   UDP: communicate with client via UDP protocol

2. **PORT NUMBER**
   Setting the communication port with Alarm server.

3. **UNIQUE ID**
   Setting the ID number of your DVR to Alarm server.

4. **SERVER 1**
   Assign the IP address of Alarm server 1.

5. **SERVER 2**
   Assign the IP address of Alarm server 2.

6. **SERVER 3**
   Assign the IP address of Alarm server 3.

3.7.3 EMAIL

In the **EMAIL** of the **NETWORK SETUP MENU,** we define:

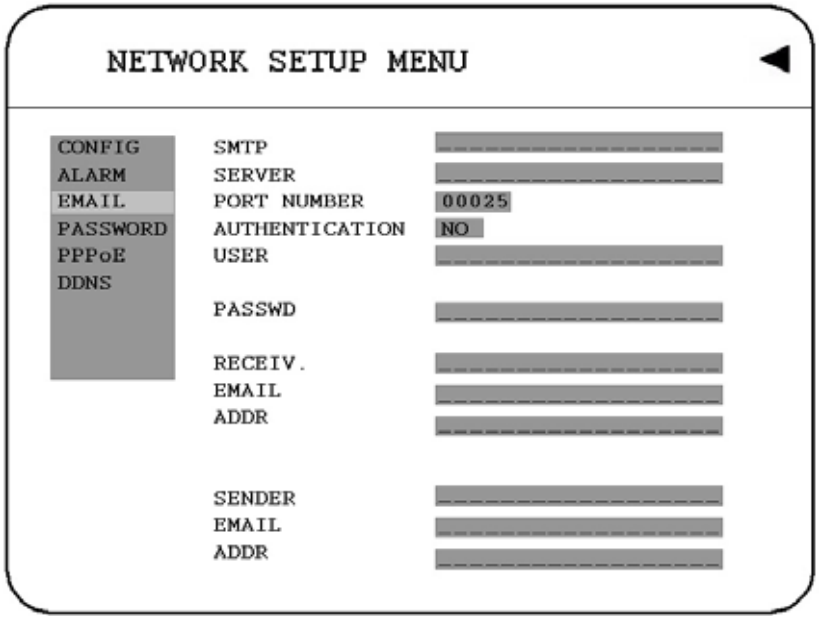


Diagram 3.12

1. **SMTP SERVER**
   Assign the SMTP (e-mail) server's name. Note: please do not enter IP address.

2. **PORT NUMBER**
   Assign the port number for SMTP server.

3. **AUTHENTICATION**
   Select "YES", if the SMTP server requires Authentication (user name / password)

4. **USER**
   Input the login user ID if the SMTP server requires Authentication.

5. **PASSWD**
   Input the password if the SMTP server requires Authentication.

6. **RECEIV. EMAIL ADDR**
   Input the e-mail address for receiving e-mail message when the EVENT is enabled and triggered. For example: In Motion Setup Menu, if the "EMAIL/NETWORK" is set to "YES", this e-mail address will receive a text message and an "ARV" format of a still image from DVR when Motion is triggered. This "ARV" file can be played back by opening "DVRViewer.exe" that you downloaded from the DVR or the Remote Viewer (Browser) or from the Copy Menu (labeled viewer).

7. **SENDER EMAIL ADDR**
   Input sender's e-mail address, so that receiver can recognize the sender when an event message is sent out.

3.7.4 PASSWORD

In the **PASSWORD** of the **NETWORK SETUP MENU,** we define:

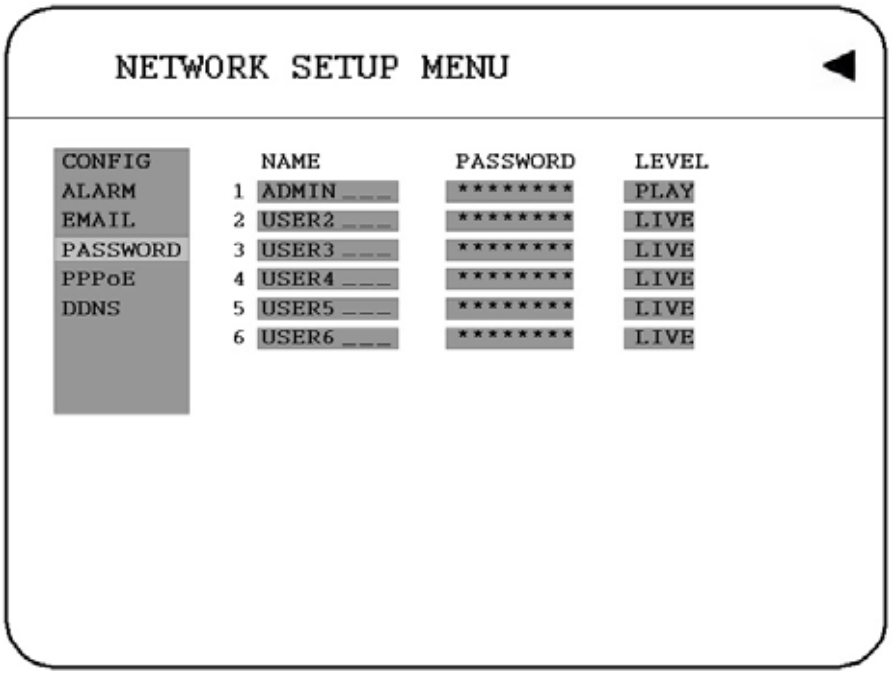


Diagram 3.13

User-Name/Password/Level: This category is to set up the users that will log into the network. Please remember that this portion of the Network setting menu is set up in column format.
The default User Name = ADMIN
The default Password = 11111111 (only numeric)

There are 2 level types:

1. **Play**: Allows the user to view live video, perform a search, playback and control the PTZ camera (if one is connected)

2. **Live**: Allows the user only to view live video

To change this, simply use the Jog Dial on the DVR.

Example:	USER-NAME	Password	Level
	admin	11111111	Play
Changed to	Adam	22222222	Play

3.7.5 PPPoE

In the **PPPoE** of the **NETWORK SETUP MENU,** we define:

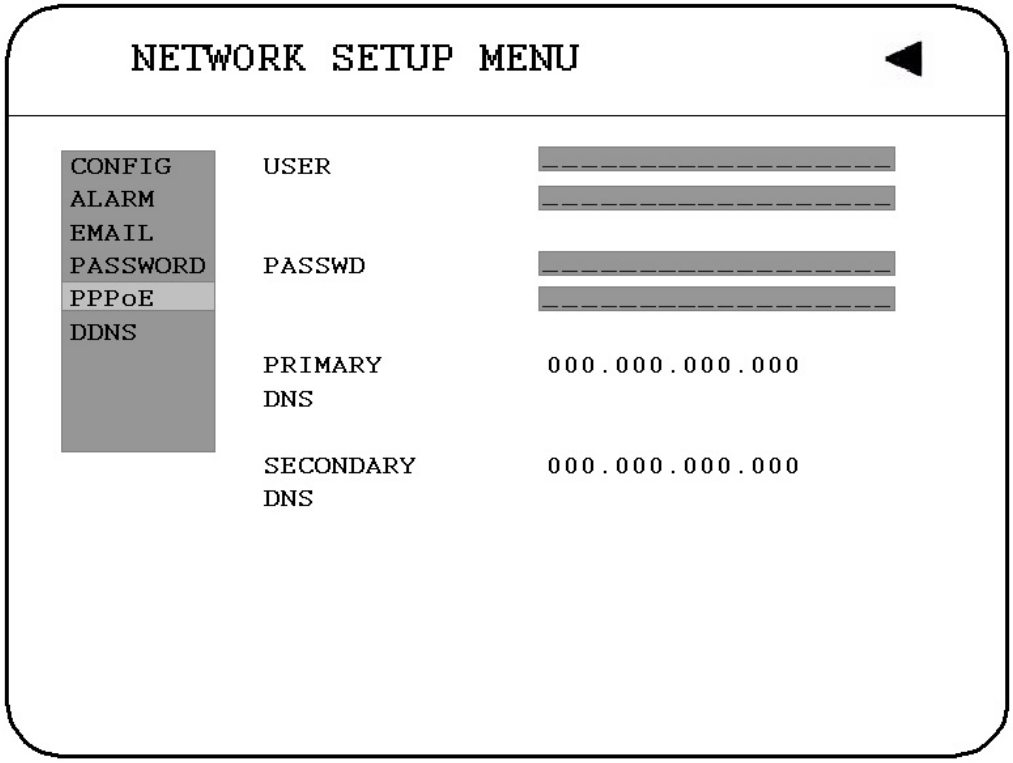


Diagram 3.14

1. **USER**
   User name that is provided by ISP for PPPoE Connection

2. **PASSWD**
   Password that is provided by ISP for PPPoE connection

3. **PRIMARY DNS**
   An IP address of DNS server that is provide by ISP.

4. **SECONDARY DNS**
   If your ISP provides you an IP address secondary DNS, please set it in here.

NOTE:
1) Please complete all settings in **PPPoE** Setup Menu, then return to **CONFIG** for changing IP CONFIG to PPPoE. Otherwise, PPPoE settings won't be valid.
2) If you select first PPPoE in IP CONFIG of CONFIG option, while PPPoE settings haven't been done yet, then PPPoE function won't work.

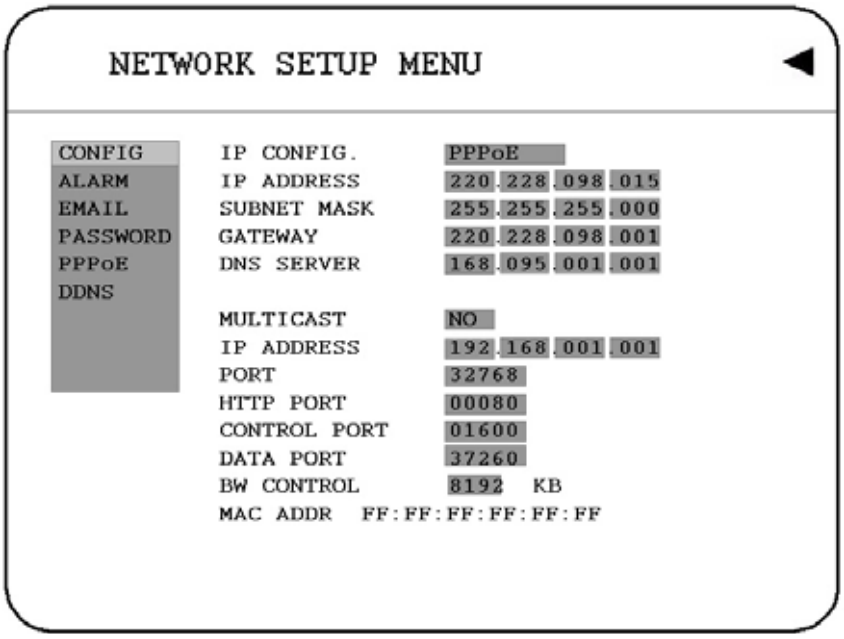


Diagram 3.15

3.7.6 DDNS

In **DDNS** of the **NETWORK SETUP MENU,** we define :

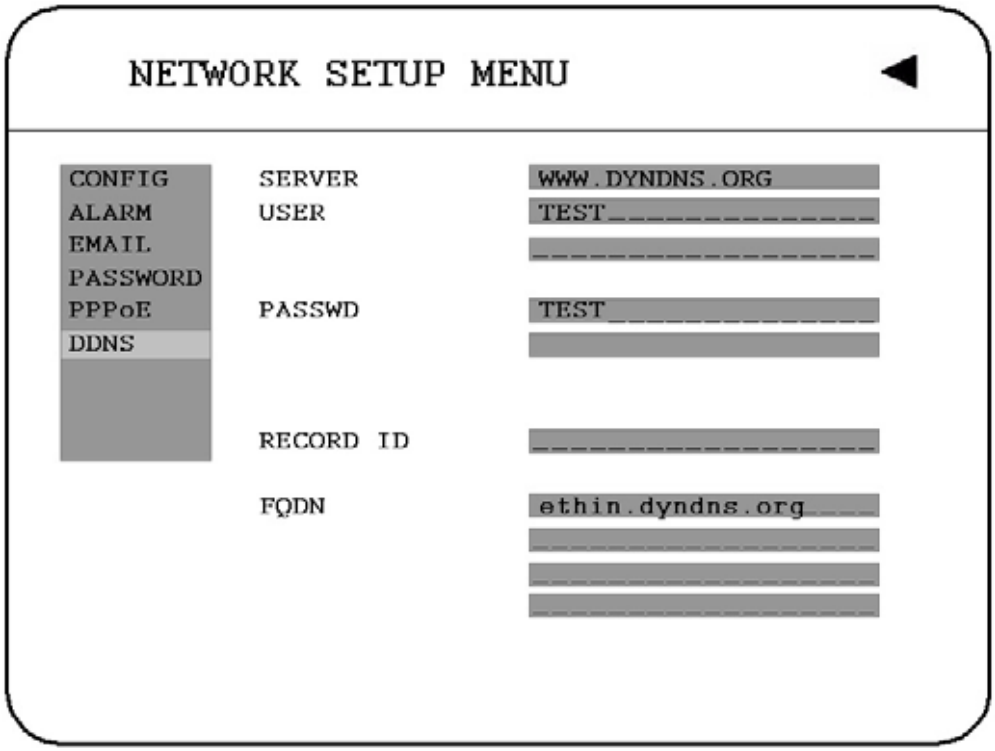


Diagram 3.16

For example: A user had applied for a DDNS account from Http://www.dyndns.org.
User name: TEST
Password: TEST
Domain name ethin.dyndns.org.

1. **SERVER**
   DDNS provider.

2. **USER**
   User name of the account.

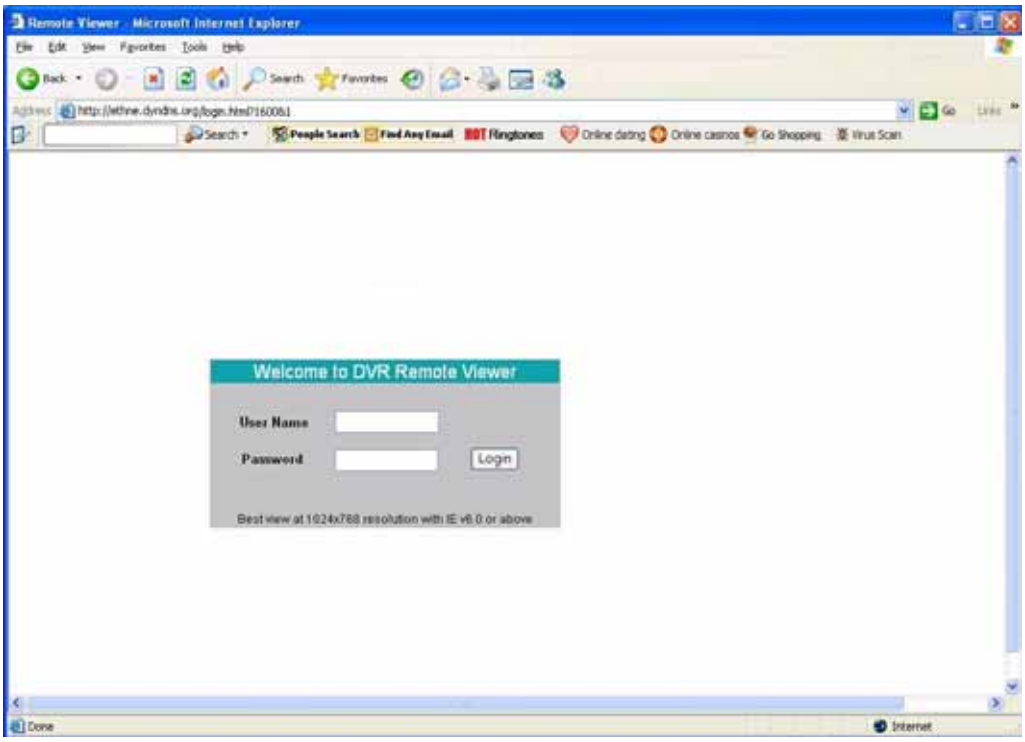
3. **PASSWD**
   Password of the account.

4. **RECORD ID**
   Record ID**.**

5. FQDN

The domain name of this account.

Users can connect to DVR that uses dynamic IP address by entering the domain name “ethne.dyndns.org” in IE browser. (This domain name is only an example, the DDNS account that user applies may differ from this example). They don’t have to know the IP address.



3.8 Schedule Setup Menu

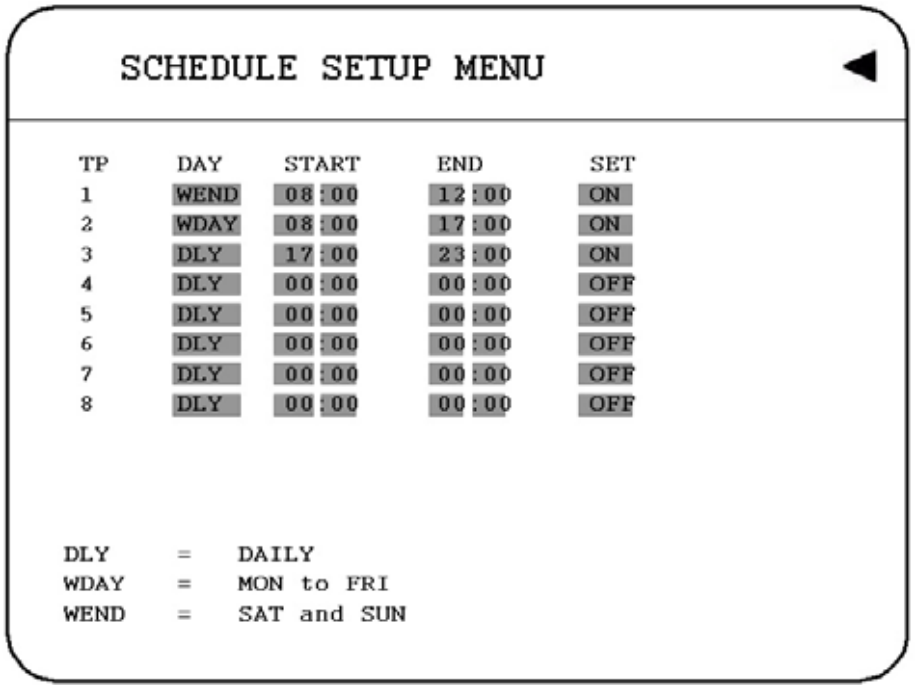

SCHEDULE SETUP MENU
TP DAY START END SET
1 WEND 08:00 12:00 ON
2 WDAY 08:00 17:00 ON
3 DLY 17:00 23:00 ON
4 DLY 00:00 00:00 OFF
5 DLY 00:00 00:00 OFF
6 DLY 00:00 00:00 OFF
7 DLY 00:00 00:00 OFF
8 DLY 00:00 00:00 OFF
DLY = DAILY
WDAY = MON to FRI
WEND = SAT and SUN

Diagram 3.17

Diagram 3.17 is a screen shot of the **SCHEDULE SETUP MENU**. In this menu you can set a unique timer any day of the week to start recording from a specified start time to an end time. This menu works together with the camera menu, you will notice 1~8 TP (time period), which is also seen in the camera menu. In the **SCHEDULE SETUP MENU** the following fields are defined as:

1. DAY

This field represents the day of the week you wish to set the timer record for. Initially it is set to Sun as default. You may choose from Mon-Sun as well as DLY. If you wish to create a daily timer for every day of the week you may choose the DLY option. To change this, simply use the Jog Dial on the DVR.

MON (Monday), **TUE** (Tuesday), **WED** (Wednesday), **THU** (Thursday), **FRI** (Friday), **SAT** (Saturday), **SUN** (Sunday).

WDAY: Weekday, from Monday to Friday.
WEND: Weekend, Saturday and Sunday.
DLY: Daily, everyday of the week.

2. START

This field is used to set the time you wish to start the timer recording. To change this, simply use the Jog Dial on the DVR.

Hour: 0 ~ 23 in 24 hour time format; **1~12** in 12 hour time format.
Minutes: 00 ~ 59

Note: To record all day long: 12:00am~12:00 am for 12-hour-format 00:00~00:00 for 24-hour-format.

3. END

This field is used to set the time you wish to stop the timer recording. To change this, simply use the Jog Dial on the DVR.

Hour: 0 ~ 23 in 24 hour time format; **1~12** in 12 hour time format.
Minutes: 00 ~ 59

4. SET

This field is used to turn the timer recording on or off. To change this, simply use the Jog Dial on the DVR.

ON: Enable a scheduled record time period.
OFF: Disable a scheduled record time period.

3.9 Disk Setup Menu

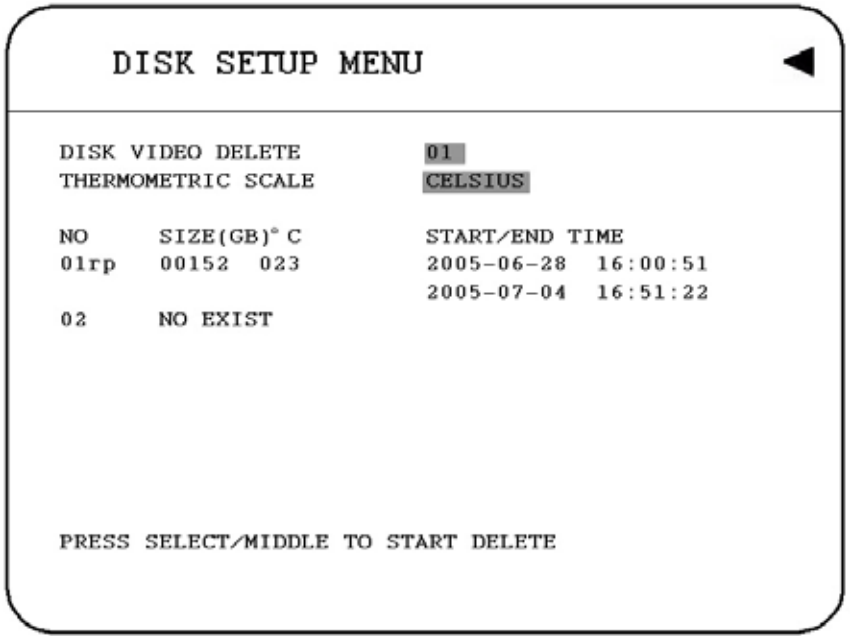


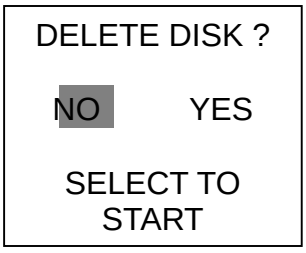
Diagram 3.18

Diagram 3.18 is a screen shot of the **DISK SETUP MENU**. This menu is for viewing Disk information and formatting the disks. For every configuration change or initial setup we recommend formatting the Hard Disk. In the **DISK SETUP MENU** the following fields are defined as follows:

1. **DISK VIDEO DELETE**
   Press **SELECT** to start delete. A delete disk confirmation window will show up after pressing **SELECT** button.

   Dial the Jog to move highlighter to **YES,** and then press **SELECT** button; a deleting indicator DELETE..... will show up.

   If you do not want to delete the disk after the delete disk confirmation window shows up, you can move highlighter to **NO**, and then press **SELECT** to quit. An indicator of success SUCCESS..... will show up when delete is completed.



Note: System will ask you to stop recording if you delete the disk when system is in the recording mode.

2. **THERMOMETRIC SCALE**
   Select **CELSIUS** or **FAHRENHEIT** for thermometric scale of the disk.

3. **NO/SIZE/C** or **F/Start/End Time**
   Show the number of drives, the size of each drive and the temperature as well as the days and times range stored on the hard drive.

Note ① The number of disk may differ depending on the model.
② For EDVR16D3 model, SCSI can be added, maximum of 50 external disk arrays.

3.10 Control Setup Menu

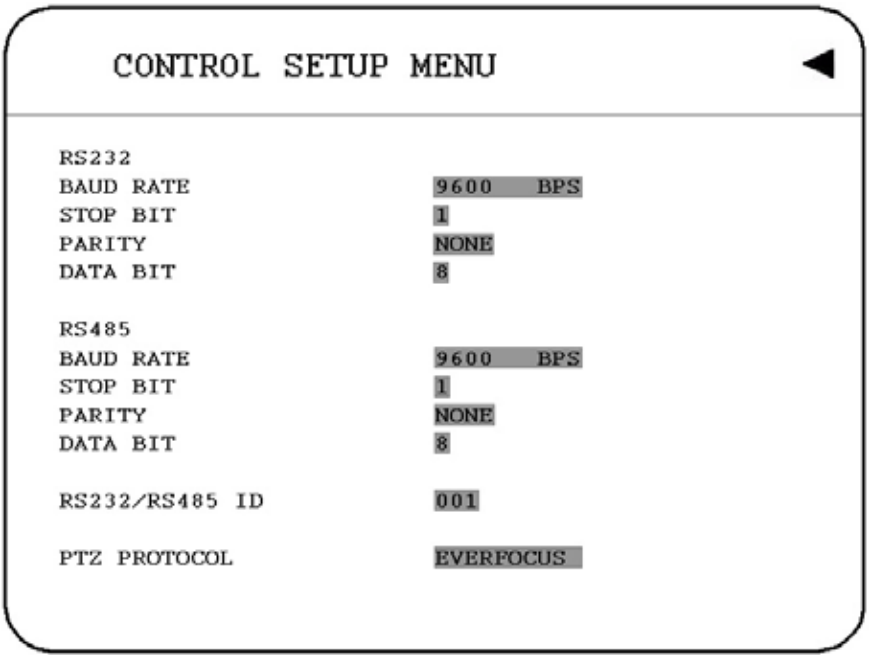


Diagram 3.19

Diagram 3.19 is a screen shot of the Control Setting Menu. This menu is to define the settings for DVR remote control through serial interface in the RS232/RS485 menu. The following fields are defined in the **Control Setting Menu**:

RS232:

1. **RS232 Baud Rate**
   This field is to set the speed at which is used to transmit instruction or information through the RS232 port on the DVR. There are six different speeds, 2400 BPS, 4800 BPS, 9600 BPS, 19200 BPS, 38400 BPS and 57600 BPS. The default setting from the factory is 9600 BPS. To change this, simply use the Jog Dial on the DVR.

2. **RS232 Stop Bit**
   This field is to set the stop bit for the RS232 connection. There are two different stop bits, 1 or 2. The default in the DVR is set to 1. To change this, simply use the Jog Dial on the DVR.

3. **RS232 Parity**
   This field is to select the parity level at which you will be connected. You can choose between None, Odd, or Even parity levels. Default is set to none. To change this, simply use the Jog Dial on the DVR.

4. **RS232 Data Bit**
   This field is the data bit at which you will be transferring. There are two settings for this option: 8 or 7. The default is set to 8. To change this, simply use the Jog Dial on the DVR.

RS485:

5. **RS485 Baud Rate**
   This field is to set the speed at which is used to transmit instruction or information through the RS485 port on the DVR. There are six different speeds, **2400, 4800, 9600, 19200, 38400** and **57600** BPS. The default setting from the factory is 9600 BPS. To change this, simply use the Jog Dial on the DVR.

6. **RS485 Stop Bit**
   This field is to set the stop bit for the RS485 connection. There are two different stop bits, 1 or 2. The default in the DVR is set to 1. To change this, simply use the Jog Dial on the DVR.

7. **RS485 Parity**
   This field is to select the parity level at which you will be connected. You can choose between None, Odd, or Even parity levels. Default is set to none. To change this, simply use the Jog Dial on the DVR.

8. **RS485 Data Bit**
   This field is the data bit at which you will be transferring. There are two settings for this option: 8 or 7. The default is set to 8. To change this, simply use the Jog Dial on the DVR.

9. **RS232/RS485 ID**
   This entry is used to assign each device its own ID code if more than one unit is used through the RS232/RS485 connection. The default is set to 001. To change this, simply use the Jog Dial on the DVR.

10. **PTZ PROTOCOL**
    Select PTZ protocol from **EVERFOCUS**, **PELCO-D, PELCO-P** and **ED2200/2250.**

3.11 Warning Setup Menu

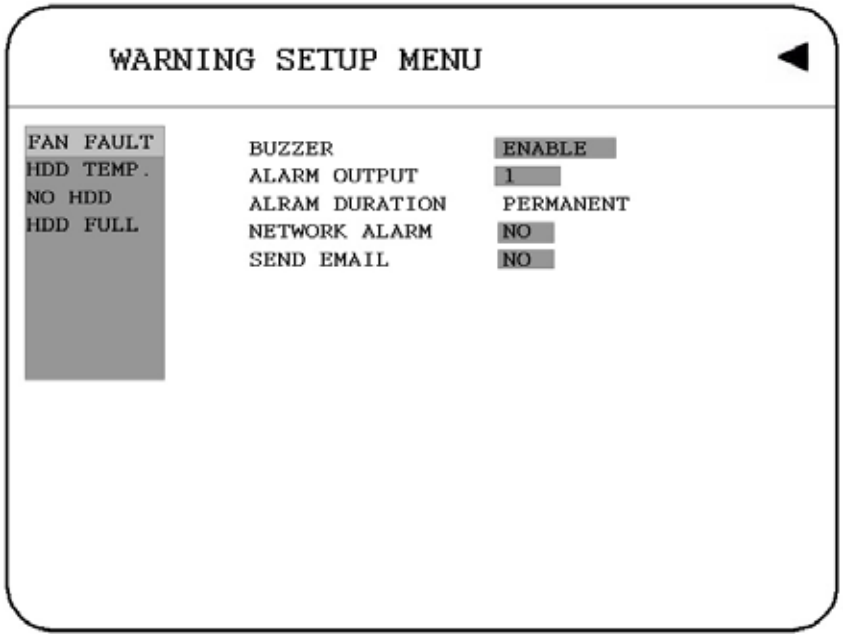


Diagram 3.20

Diagram 3.20 is a screen shot of the **Warning Setup Menu**. This menu is to set the warning system settings. If any critical errors were to arise, this portion of the menu would be for error handling. For example if you set the fan buzzer on and the fan wasn't able to turn on then you would here an alarm go off. In the **Warning Setup Menu** the following fields are defined as:

3.11.1 FAN FAULT

In **FAN FAULT**, we define:

1. **BUZZER:** Fan buzzer. To change this, simply use the Jog Dial on the DVR.

   ENABLE: To enable a buzzer when the fan does not work.
   DISABLE: To disable fan buzzer.

2. **ALARM OUTPUT**
   This will transmit a signal to another device. The setting of alarms are **NONE = not activated, 1 = output signal 1 transmitted, 2 = output signal 2 transmitted, 3 = output signal 3 transmitted and 4 = output signal 4 transmitted.** To change this, simply use the Jog Dial on the DVR. (Only EDVR16D3 model has 4 alarm outputs, all the rest models have only 1 alarm output).

3. **ALARM DURATION**
   Permanent

4. **NETWORK ALARM**

   YES: To enable network alarm.
   NO: To disable network alarm.

5. **SEND EMAIL:**

   YES: Send an email when the fan does not work.
   NO: Do not send an email when the fan does not work.

   The email address can be set in the **NETWORK SETUP MENU**.

3.11.2 HDD TEMP

In **HDD TEMP**, we define:

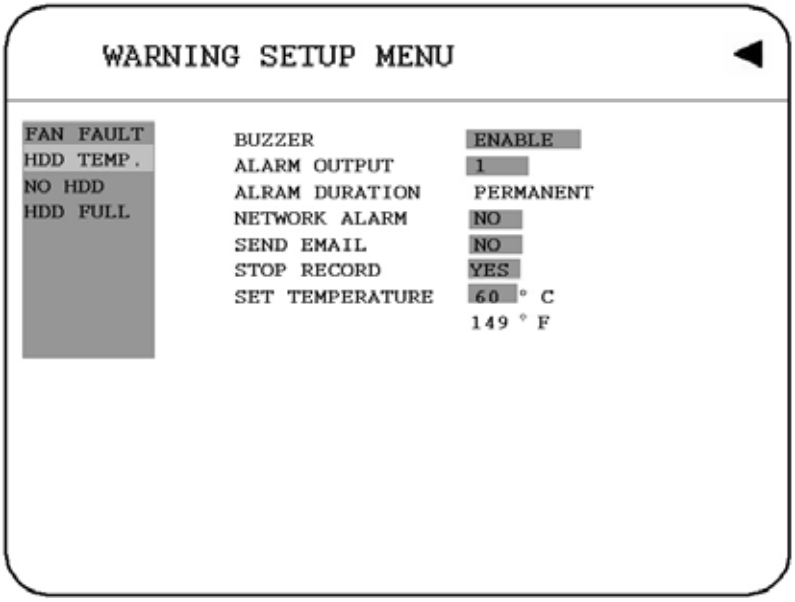


Diagram 3.21

1. **BUZZER:** HDD TEMPERATURE buzzer.

   ENABLE: To enable a buzzer when HDD's temperature is higher than the temperature set in "SET TEMPERATURE".
   DISABLE: To disable HDD TEMP. Buzzer.

2. **ALARM OUTPUT**
   This will transmit a signal to another device. The setting of alarms are **NONE = not activated, 1 = output signal 1 transmitted, 2 = output signal 2 transmitted, 3 = output signal 3 transmitted and 4 = output signal 4 transmitted.** To change this, simply use the Jog Dial on the DVR. (Only EDVR16D3 model has 4 alarm outputs, all the rest models have only 1 alarm output).

3. **ALARM DURATION**
   Permanent

4. **NETWORK ALARM**

   YES: To enable network alarm.
   NO: To disable network alarm.

5. SEND EMAIL

YES: Send an email when HDD's temperature is overheated.
NO: Will not send an email when HDD's temperature is overheated.

The email address can be set in the **NETWORK SETUP MENU**.

6. STOP RECORD

YES: Stop recording when HDD's temperature is overheated.
NO: Will not stop recording even when HDD's temperature is overheated.

7. SET TEMPERATURE:

When HDD's temperature is higher than 60°, then all other settings in HDD TEMP. will take effect (BUZZER, ALARM OUTPUT, ALARM DURATION, NETWORK ALARM, SEND EMAIL, STOP RECORD).

3.11.3 NO HDD

In **NO HDD**, we define:

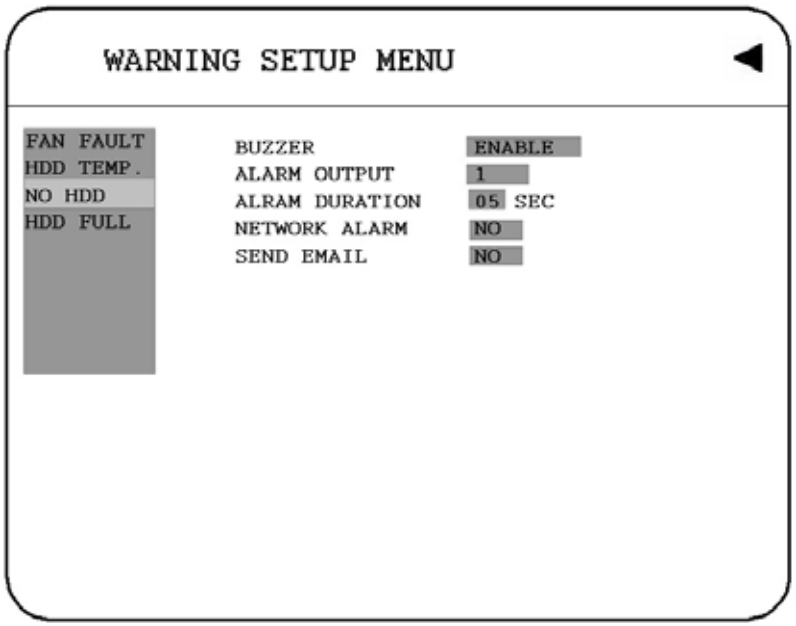


Diagram 3.22

1. **BUZZER:** NO HDD buzzer.

   ENABLE: To enable a buzzer when no HDD has been found.
   DISABLE: To disable NO HDD buzzer.

2. **ALARM OUTPUT**
   This will transmit a signal to another device. The setting of alarms are **NONE = not activated, 1 = output signal 1 transmitted, 2 = output signal 2 transmitted, 3 = output signal 3 transmitted and 4 = output signal 4 transmitted.** To change this, simply use the Jog Dial on the DVR. (Only EDVR16D3 model has 4 alarm outputs, all the rest models have only 1 alarm output).

3. **ALARM DURATION**
   Buzzer noise and event record duration of an alarm, from 1 sec to 99 seconds. The default value is 5 seconds.

4. **NETWORK ALARM**

   YES: To enable network alarm.
   NO: To disable network alarm.

5. SEND EMAIL:

YES: Send an email when no HDD has been found.
NO: Will not send an email when no HDD has been found.

The email address can be set in the **NETWORK SETUP MENU**.

3.11.4 HDD FULL

In **HDD FULL**, we define:

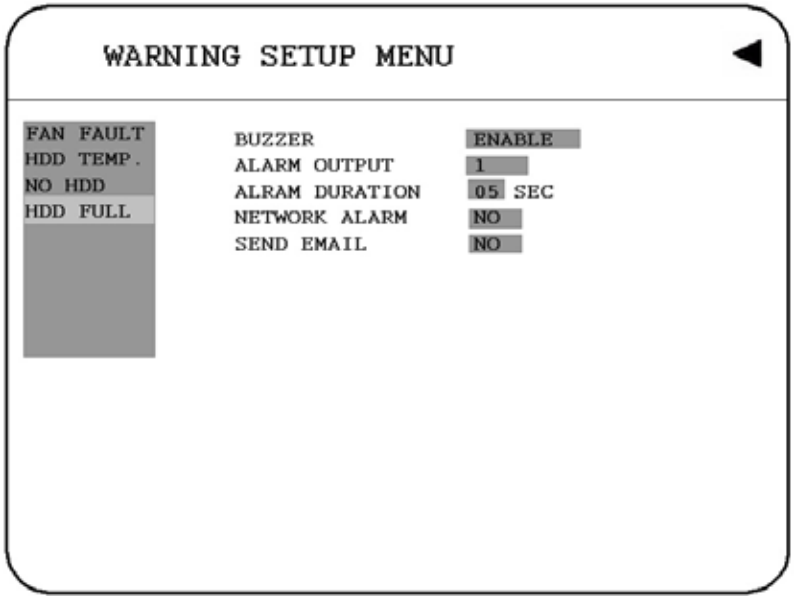


Diagram 3.23

1. BUZZER: HDD FULL buzzer.

ENABLE: To enable a buzzer when HDD is full.
DISABLE: To disable HDD Full buzzer.

2. ALARM OUTPUT
This will transmit a signal to another device. The setting of alarms are **NONE = not activated, 1 = output signal 1 transmitted, 2 = output signal 2 transmitted, 3 = output signal 3 transmitted and 4 = output signal 4 transmitted.** To change this,

simply use the Jog Dial on the DVR. (Only EDVR16D3 model has 4 alarm outputs, all the rest models have only 1 alarm output).

3. ALARM DURATION

Buzzer noise and event record duration of an alarm, from 1 sec to 99 seconds. The default value is 5 seconds.

4. NETWORK ALARM:

YES: To enable network alarm.
NO: To disable network alarm.

5. SEND EMAIL:

YES: Send an email when HDD is full.
NO: Will not send an email when HDD is full.

The email address can be set in the **NETWORK SETUP MENU**.

3.12 System Setup Menu

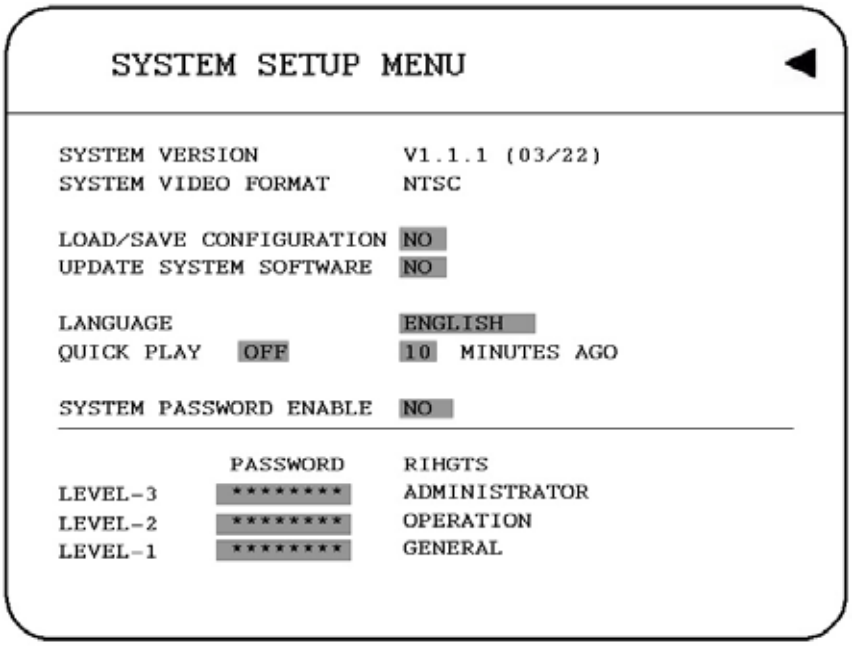


Diagram 3.24

Diagram 3.24 is a screen shot of the **SYSTEM SETUP MENU**. This menu is for setting up any additional options and restoring defaults to the digital recorder. In the **SYSTEM SETUP MENU** the following fields are defined as follows:

1. **SYSTEM VERSION:** Current system firmware version.

2. **SYSTEM VIDEO FORMAT:** NTSC or PAL. System can detect the input signal type automatically from camera 1 while system is booting up. Users do not need to set it up.

Note: The signal type is detected by camera 1, so camera 1 input has to be connected.

3. **LOAD/SAVE CONFIGURATION:**

   YES: Turn the jog to enter the selection window, there are 4 options available: **CANCEL**, **DEFAULT**, **LOAD**, and **SAVE**. Select "CANCEL" for leaving the existing window. Select "DEFAULT" to load factory default values. Select "LOAD" to upload and save DVR configuration settings from USB. Select "SAVE" to save existing DVR configuration settings to USB device. Press "**SELECT**" button from the front panel to confirm once the selection is made. Note that a USB device has to be inserted properly before choosing "LOAD" or "SAVE" options. System will ask you to stop recording if you confirm to load default setting, to load saved setting or to save existing setting when the system is recording.

NO: Press “ENTER” key to leave “LOAD/SAVE CONFIGURATION”.

4. **UPDATE SYSTEM SOFTWARE:** Turn the jog to enter the selection window.

   YES: Select **YES** to update system software from USB by pressing **SELECT** to start.
   NO: Select **NO** for canceling updating by pressing **SELECT** to start.

> **Note:**
> ① System will ask you to stop recording if you confirm to update when system is recording.
>
> ② USB device must be inserted properly before updating system software.
>
> ③ Do not remove USB device when you are updating system software, it may cause crash to the machine.
>
> ④ Power failure or machine being turn off during updating process may result an abnormal start of the machine.

5. **LANGUAGE**
   System can be set in different languages. The available languages depend on the country or area, subject to change without further notice. Please consult your sales representative for the most updated information.

6. **QUICK PLAY**
   Allows the user to press the play button and playback video from the time indicated from this field (1 ~ 59 Min).

   ON: Enable quick play. The video played time is the immediate play time from now.
   OFF: Disable quick play. Videos will start to be played from the end point of the last play.

   TIME: Quick play time, from 1 ~ 59 min. The default value is 10 minutes.

> **Note:** The recommendatory quick play time is 10 minutes. The video cannot be played due to the video file is not stored to HDD yet if you set a quick play time too short.

7. SYSTEM PASSWORD ENABLE

YES: Select **YES** to enable the password function.
NO: Select **NO** to disable the password function.

8. PASSWORD and **RIGHTS:** The login passwords here are used to operate and set up this machine locally not from the remote tcp/ip connection. The different login passwords indicate the different level of users, and no login name is necessary. The digit will appear instead of a "✳" sign when the cursor is moved on it. Turn the Jog to change the digit on which the cursor is located of the password, and press **ENTER/CALL** to go next/last digit. The available digits are **1, 2, 3, 4, 5, 6, 7, 8** and **9** for 1/16 CH model; whereas **1, 2, 3** and **4** for 4 CH. model**.** There are three system access levels and one none access level. The below chart on the next page shows the rights of each level.

Note:

① If the passwords of different levels are set the same, you will enter a higher level when you login. For example, you will login to ADMINISTRATOR level if the password of ADMINISTRATOR and GENERAL levels are the same.

② After operation by a higher level user, please go back to camera live state and wait for one minute to activate system password for another user.

③ After upgrading system software, please do the following actions before recording:

1) Load System Default in **System Setup Menu**.
2) Delete disk in **Disk Setup Menu.**

User Level and Right				
LEVEL	LEVEL-3 ADMINISTRATOR	LEVEL-2 OPERATOR	LEVEL-1 GENERAL	NONE ACCESS ----
DISPLAY	OK	OK	OK	OK
MODE	OK	OK	OK	OK
ZOOM	OK	OK	OK	OK
SELECT	OK	OK	OK	NO
SEQ	OK	OK	OK	NO
CALL	OK	OK	OK	NO
MENU	OK	NO	NO	NO
COPY	OK	OK	NO	NO
SEARCH	OK	OK	NO	NO
PLAY	OK	OK	NO	NO
STOP	OK	OK	NO	NO
REC	OK	OK	NO	NO
PAUSE	OK	OK	NO	NO

Note:
The above table will be updated if there is any change.

Chapter

4

4. Recording Overview

Before continuing with the Recording Overview please be sure to have reviewed DVR Menu Setup (Chapter 3) specifically the camera & schedule. You are now ready to begin setting up the machine for recording. This chapter will show you how to setup the recorder for three basic types of recording: Instant recording, scheduled recording, and event recording. **Instant recording (N)** is simple as it sounds its instantaneous, basically manually pressing the record button for recording, much like pressing the record button on a VCR. **Scheduled recording (1~8)** is based upon a set time period of when to begin & end the recording. **Event recording** would consist of an alarm or motion having taken place to trigger the DVR to record on that event.

4.1 Instant (N) Recording Setup

Press the Record key to start recording immediately.

REC

When **REC** is pressed, the pictures being monitored will be recorded in the HDD.

The recording quality and recording speed can be set in the **CAMERA SETUP MENU**. To set the target camera for a particular recording speed /IPS (when using the instant record method). Apply the changes to the last Time Period (TP) row labeled **N.**

A “R01” sign appears in the record status bar. The number following R signifies HDD number.

STOP

Press **STOP** key to stop instant recording.

The **STOP** key can be activated only in instant recording mode, but not available in the schedule or event recording mode.

When the HDD is full, the machine will stop recording automatically or overwrite from the beginning of the HDD. It depends on the setting in the **RECORD SETUP MENU**.

Note:
If STOP key is pressed while machine is recording or playing video, the playing function will be disabled first. If STOP key is pressed twice the DVR will come out of record mode completely.

4.2 Schedule Recording Setup

Set up the **DAY**, **START** time, **END** time and then enable the **SET** in the **SCHEDULE SETUP MENU.**

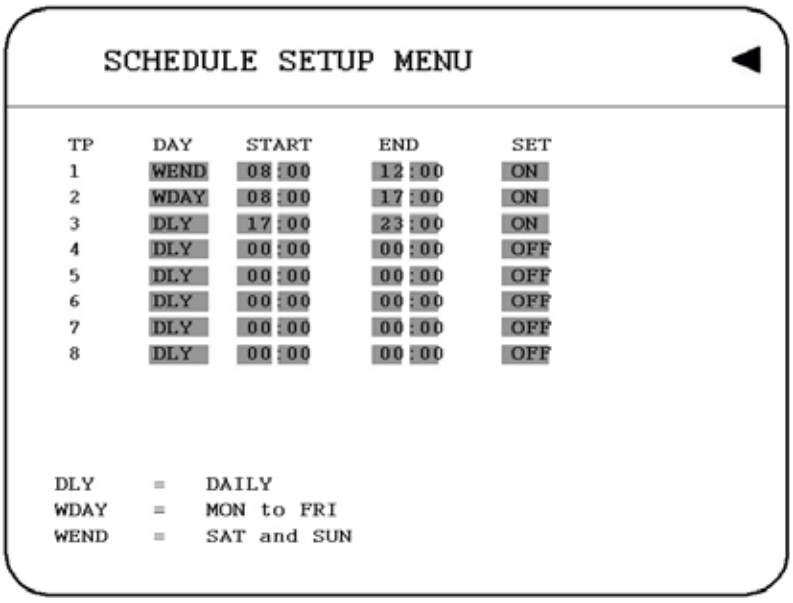

SCHEDULE SETUP MENU
TP DAY START END SET
1 WEND 08:00 12:00 ON
2 WDAY 08:00 17:00 ON
3 DLY 17:00 23:00 ON
4 DLY 00:00 00:00 OFF
5 DLY 00:00 00:00 OFF
6 DLY 00:00 00:00 OFF
7 DLY 00:00 00:00 OFF
8 DLY 00:00 00:00 OFF
DLY = DAILY
WDAY = MON to FRI
WEND = SAT and SUN

Diagram 4.1

Please refer to **SCHEDULE SETUP MENU,** to see setting procedure and more details.

4.3 Event Recording Setup

We will now define two event recording types **ALARM** and **MOTION**. After the event recording is enabled, the DVR will start an event recording when an event occurs. For instance, when motion activity is detected by the DVR it will begin recording at the specific IPS set under event column. Or when an alarm is detected by the DVR it will begin recording at the specific IPS set under event column.

In order to start an event recording, you will **NEED** to perform the following:

1. Enable the event in each event (alarm or motion menu) setting first. For example (motion), enable Camera 2 in the **MOTION SETUP MENU** (shown as below). You can enable multiple alarm or motion triggers.

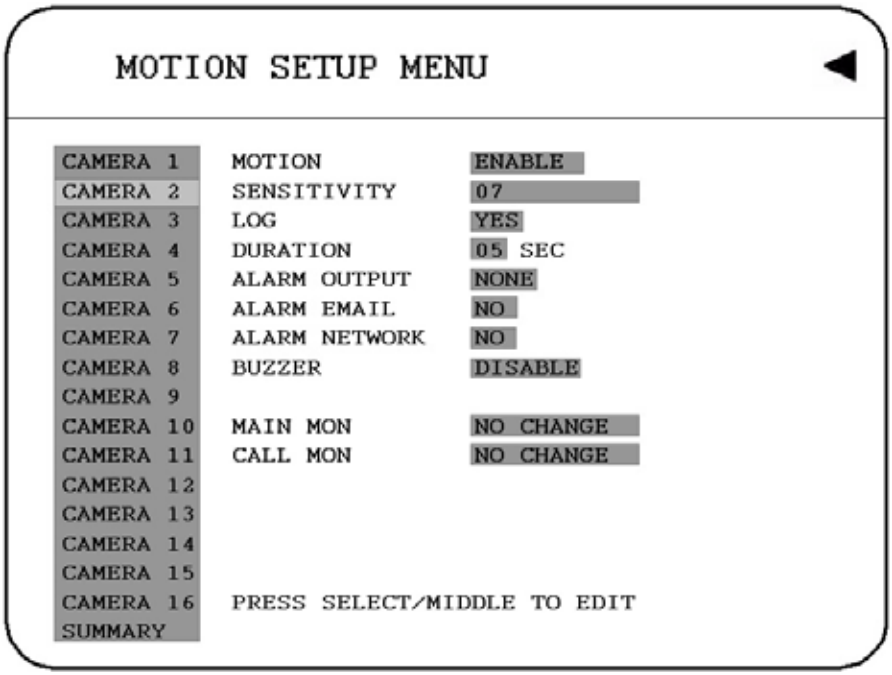
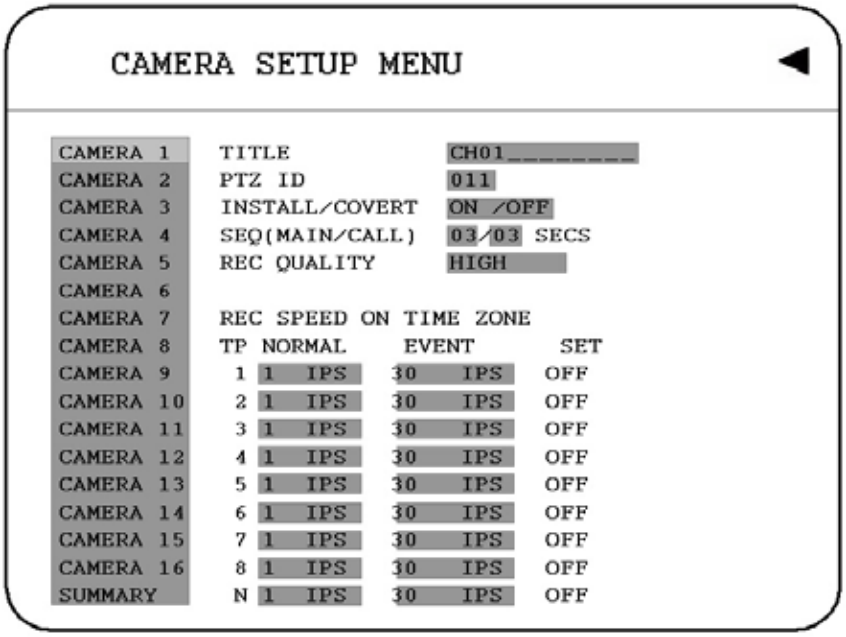


Diagram 4.2

2. When the event and schedule are set, enter the **CAMERA SETUP MENU** to set the event recording speed (IPS) of the camera in the time period (TP) section.



3. After enabling an event, you need to set a time period (TP) in the **SCHEDULE SETUP MENU.** An event recording must be set in a scheduled time period (TP). You can refer to the **SCHEDULE SETUP MENU** for time period configurations (Chapter 3.8).

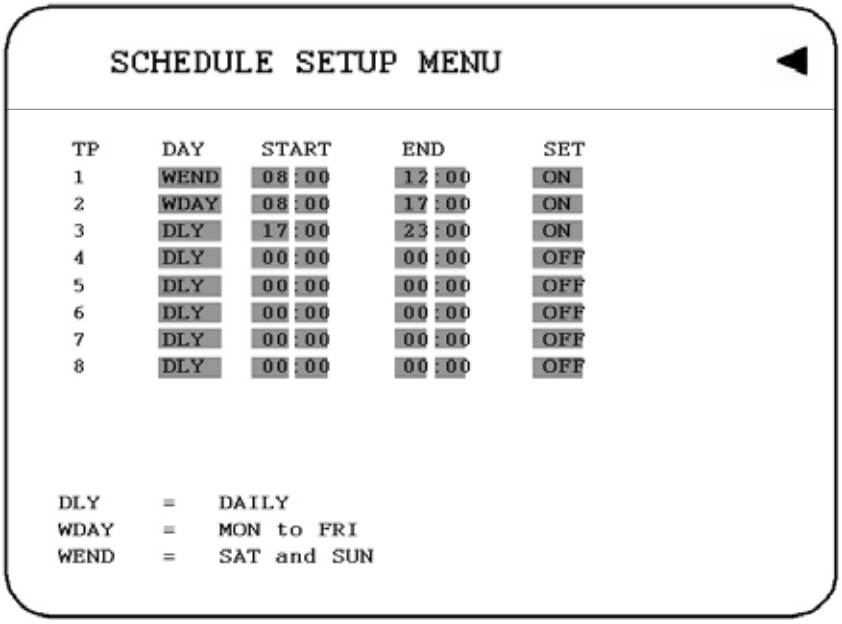

SCHEDULE SETUP MENU
TP DAY START END SET
1 WEND 08:00 12:00 ON
2 WDAY 08:00 17:00 ON
3 DLY 17:00 23:00 ON
4 DLY 00:00 00:00 OFF
5 DLY 00:00 00:00 OFF
6 DLY 00:00 00:00 OFF
7 DLY 00:00 00:00 OFF
8 DLY 00:00 00:00 OFF
DLY = DAILY
WDAY = MON to FRI
WEND = SAT and SUN

Diagram 4.4

Note:

① Set the normal record speed as 0 IPS in the CAMERA SETUP MENU, and Set the time period (TP) from 00:00 to 00:00 daily in the SCHEDULE SETUP MENU if you only want to record an events activity recording (motion or alarm).

② Please be reminded that Schedule setting must be done after Camera setting for event recording setup.

③ If user changes recording speed while the machine is recording, the new recording speed won't take effect. Therefore, stop recording first before changing the recording speed.

DVR provides a record function which is triggered by external signal via the 19th pin of the **ALARM INPUT / OUTPUT** port. When the record input signal is pulled low constantly, DVR will start to record. The system will stop recording when the record input signal is not pulled low.

Note: Please check APPENDIX B to see other available alarm input/output details.

Chapter

5

5. Playback Overview

Before continuing please be sure to have reviewed DVR Menu Setup (Chapter 3). You are now ready to begin setting up the DVR for playback. This chapter will show you how to setup the recorder for basic playback.

5.1 Basic Playback

(1) Playback

PLAY

Press the **PLAY** key to start playing back the stored image/audio. The video start time depends on the quick play setting in the **SYSTEM SETUP MENU**. The DVR is duplex, which means you can record and playback the same time.

(2) STOP

STOP

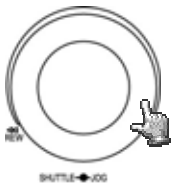
Press the **STOP** key to stop playing back.

(3) Fast Forward/Reverse Playback

PLAY

Press the **PLAY** key to begin playing back process.

Turn the **Shuttle** dial clockwise, to begin fast forward playback.



The speed will be shown on the status bar of the bottom screen.

>> 2, 4, 6, 8, 16, 32, 600X, and press **ENTER** at the same time to hold the play speed. The enter button will lock the X speed that is desired or you can manually hold the shuttle dial in the position.

Press **PLAY** again to return normal play speed.

Turn the **Shuttle** dial counterclockwise, to start fast reverse playback.

The speed will be shown on the status bar of the bottom screen.

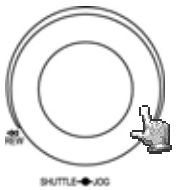
<< 2, 4, 6, 8, 16, 32, 600X, and press **ENTER** at the same time to hold the play speed. The enter button will lock the X speed that is desired or you can manually hold the shuttle dial in the position.

(4) Slow Forward/Reverse Playback

PAUSE

During playback mode, press **PAUSE** key to freeze the playing back picture.

Turn the **Shuttle** dial clockwise, to start slow forward playback.

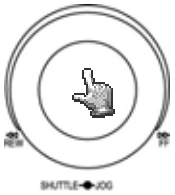


The speed will show on the status bar of the bottom screen.

>> 1/2, 1/4, 1/8, 1/16, 1/32 and press **ENTER** at the same time to hold the play speed. The enter button will lock the X speed that is desired or you can manually hold the shuttle dial in the position.

(5) Image advance Forward/Reverse

PAUSE



Press **PAUSE** key to freeze the picture.

Turn the **Jog** dial clockwise to advance the still video image by image.

Turn the **Jog** dial counterclockwise to rewind the still video image by image.

The field feed speed will increase if the **Jog** dial is turned quickly.

5.2 Search Playback

SEARCH

Press the **SEARCH** key to enter the **SEARCH MENU**.

In the **SEARCH MENU**, Dial the **Jog** clockwise or counterclockwise to change subentry values.

Press the **ENTER** key to go next subentry in search menu setting, and press the **CALL** key to go last subentry in search menu setting.

Press **MENU** to exit.
Press **SELECT** or tilt wheel of the mouse to start search.

Press **SELECT** to start search.

(1) TIME / DATE Search Playback

The following window will show up after pressing **SEARCH** key. Select **"BY TIME / DATE",** and then select the time you want to search. Press **SELECT,** the system will start to search.

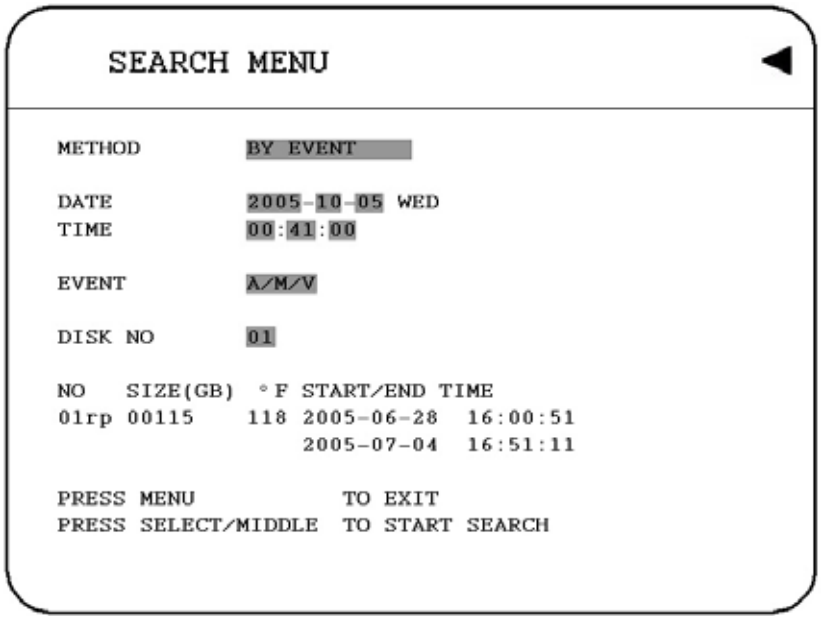


Diagram 5.1

Note:
If there is no video stored in the date/time specified, then the image will keep at the end of the last play, and the display time on the status bar shows **"??:??".**

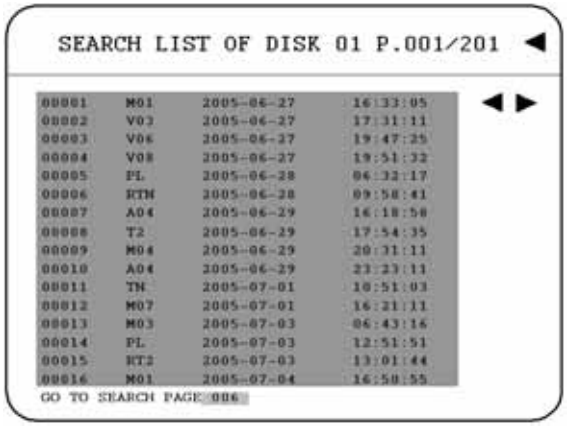
(2) EVENT Search Playback

You can change different event search methods if you select **"BY EVENT"** instead of **"BY TIME / DATE"**. 7 filters are **ALARM, MOTION, VLOSS, A/M, A/V, M/V** and **A/M/V** can be selected.
The indications of events show as below.

EVENT	Indication
ALARM	Search ALARM events
MOTION	Search MOTION events
VLOSS	Search video loss events
A / M	Search ALARM and MOTION events
A / V	Search ALARM and video loss events
M / V	Search MOTION and video loss events
A / M / V	Search all events (ALARM, MOTION and video

(3) **DATE** and **TIME** are not able to be changed in the **EVENT** search method.
The search list shows up when **SELECT** key is pressed. There are 16 events in one page, and current page / total pages shows on the top. Dial **Shuttle** clockwise or press **COPY** for moving to next page; dial **Shuttle** counterclockwise or press **CALL** for moving to previous page. If you would like to jump to a specific page directly, you can press **Search**, then dial **Jog** to the page, and press **Enter**. Dial the **Jog** to change events on the event list; the selected item will be highlighted. Press **ENTER** to play the selected event.

The event types and number show on the second column of the search list. Where



An: an Alarm event. the "n"th Alarm input.
Dn: HDD overheated, overheat temperature is based on HDD temperature set in Warning Setup Menu.
Fn: Fan fail, n = 1~3 fan number.
LH: (Logical Head): Beginning of recording date & time right after HDD has been overwritten.
LUn: Local User login record, n = 1~3, access level; where 1 is Administrator, 2 is Operator and 3 is General.
Mn: a Motion event. n: the channel Number.
PH: (Physical Head): which is the beginning point of HDD's space.
PL: a Power Loss event.
RTn: a power ReTurn event in a schedule recording mode, "REC TP= n =1~8.
RTN: a power ReTurn event in a Normal/instant recording mode.
RUn: record of Remote User login through IE, n = 1~6, access level of users.
Tn: a schedule Time period recording event, "REC TP"=1~8; Time Period 1~8.
TN: a Normal/instant Time recording event. "REC TP=N" ; Normal Recording.
Vn: a Video loss event. the "n"th channel video loss.

The last two columns are the date and time of event.

Chapter

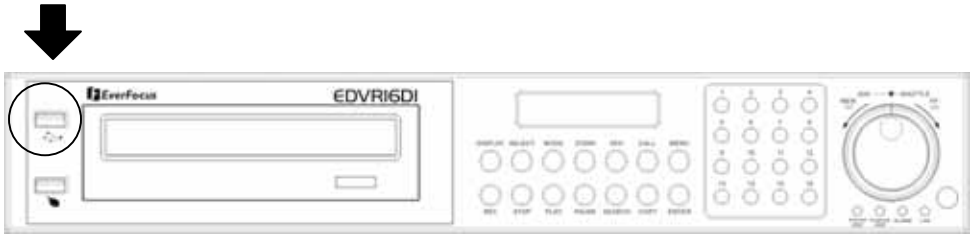
6

6. Copying Video

Before continuing please be sure to have reviewed the preceding chapters. You are now ready to copy an image or video from the DVR. This chapter will show you how to copy a still image or movie from the recorder.

Insert the USB pocket driver into the USB slot on the front panel of the DVR to copy.

USB slot:



Digital Video Recorder allows users to select the camera for copying image (video) to movie file or copying DVRViewer, which is the image (video) player. The camera title will be displaying at the top of the screen.

COPY

Press **COPY** key in live mode and then the copy menu appears.

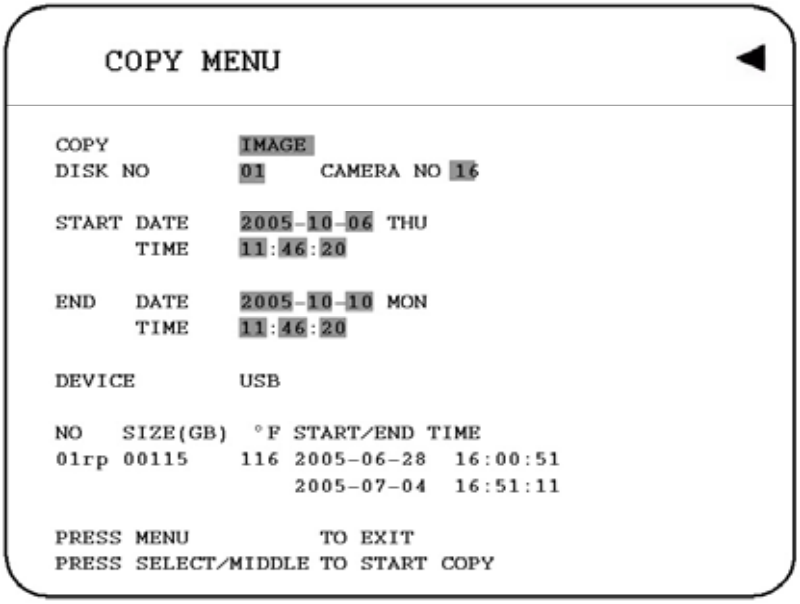


Diagram 6.1

In the **COPY MENU**, we define:

1. **COPY**

   Select **Image (video)** for copying images to movie file.

   Select **Viewer** for copying DVRViewer player.

2. **DISK NO**

   Disk number. It is changeable.

3. **CAMERA NO:**

   Camera channel number. You can select the video of camera you would like to copy.

4. **START DATE & TIME:** The start time of video you want to copy.

   END DATE & TIME: The end time of video you want to copy.

6. **DEVICE**

   The media you want to store the file. For D series, USB and DVD devices are available. For F series, only USB is available as the media to do storage.

   Press **SELECT** or tilt wheel of the mouse to copy after setting up everything.

① During playing back, press **COPY** button. (You will have a default bookmark spanning 1 minute). For example, Start copy point is 10-10-2005 10:00:00 and end copy point will be 10-10-2005 10:01:00.

② In live mode, press **COPY** button to enter the copy menu. In the Copy menu choose image under the copy option. Then, press **SELECT** button to copy, you will see the **START TIME** has been changed to the "Bookmark time". The end time is preset to 1 minute later. You can change it to another value if desired.

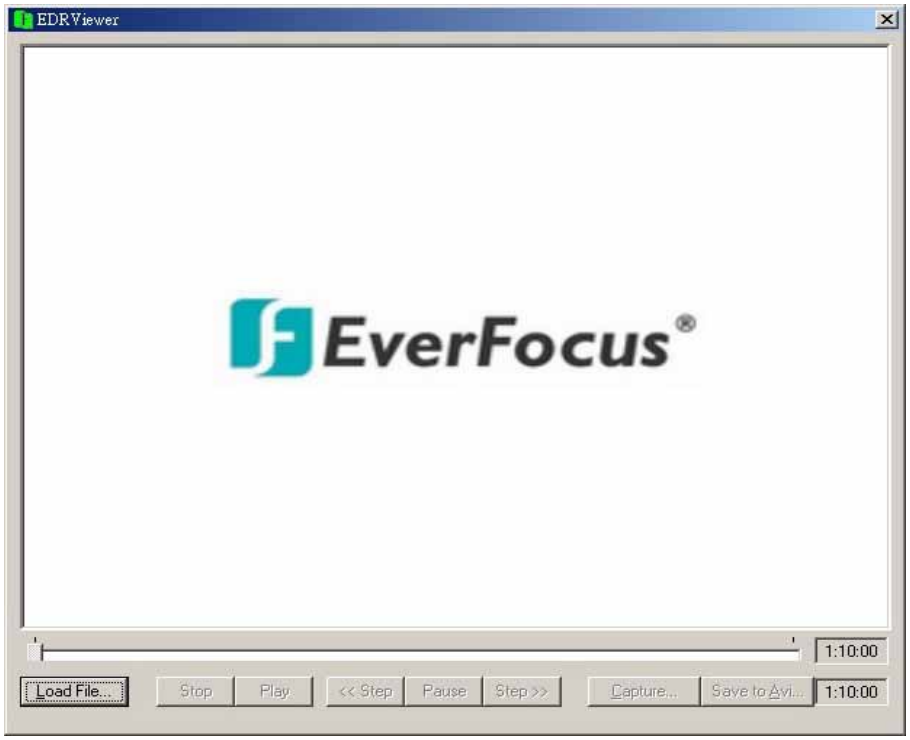
6.1 Viewing a Copied File

1. First Step is to download the viewer from your DVR. Insert a USB pocket drive into the DVR's appropriate slot. Press **COPY** button to enter the copy menu. In the Copy menu chose viewer under the copy option. Then, press **SELECT** button to copy the viewer to the USB.

2. To play the video or image you have stored on the USB pocket drive is to take the USB pocket drive and into the USB port of your computer.

3. Open up My computer in windows and you will notice a new drive has been added to the computer. This is the USB pocket drive. To view the files simply click on the drive to open it and you will see the files you archived as well as the viewer you just downloaded.

4. Open the DVRViewer.exe for loading the archived EDVR MPEG Files (.arv)



Chapter

7

7. Call Overview

This chapter will try to give you details on how to setup the **CALL MENU** on the DVR. Press the **CALL** key and the **CALL MENU** will pop up as below.

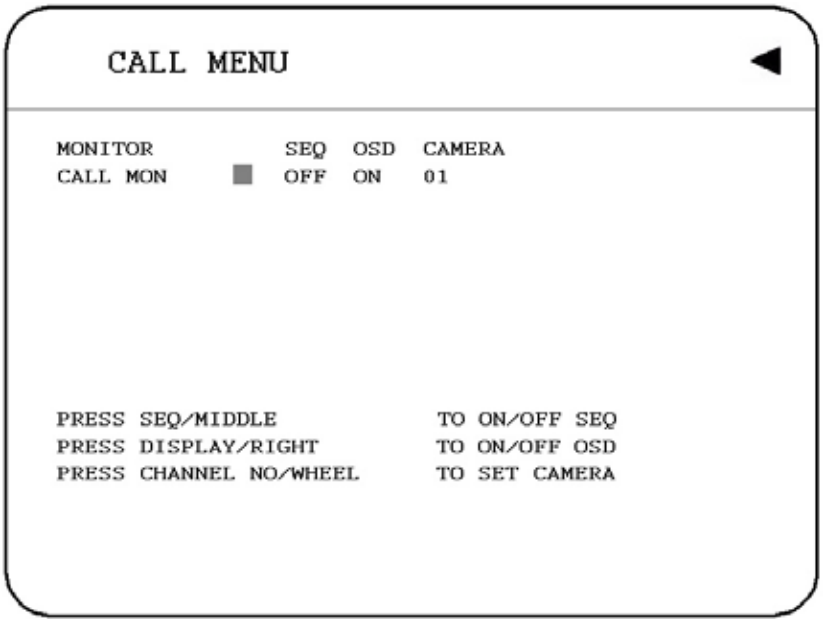

CALL MENU
MONITOR SEQ OSD CAMERA
CALL MON OFF ON 01
PRESS SEQ/MIDDLE TO ON/OFF SEQ
PRESS DISPLAY/RIGHT TO ON/OFF OSD
PRESS CHANNEL NO/WHEEL TO SET CAMERA

Diagram 7.1

In **CALL MENU,** we define:

1. **SEQ:** Sequence display on the call monitor. Press **SEQ** to switch **"ON"** or **"OFF"** of the sequence status.

2. **OSD:** Channel name display on the call monitor. Press **DISPLAY** to switch **"ON"** or **"OFF"** of the **OSD** status.

3. **CAMERA:** The display camera in the call monitor. Press **Channel NO** to set display camera.

4. **CALL MON:** Display the call monitor.

Chapter

8

8. Screen Display Setting & Mode

In a full screen display, press **SELECT** key to pop up the display adjustment window as below:

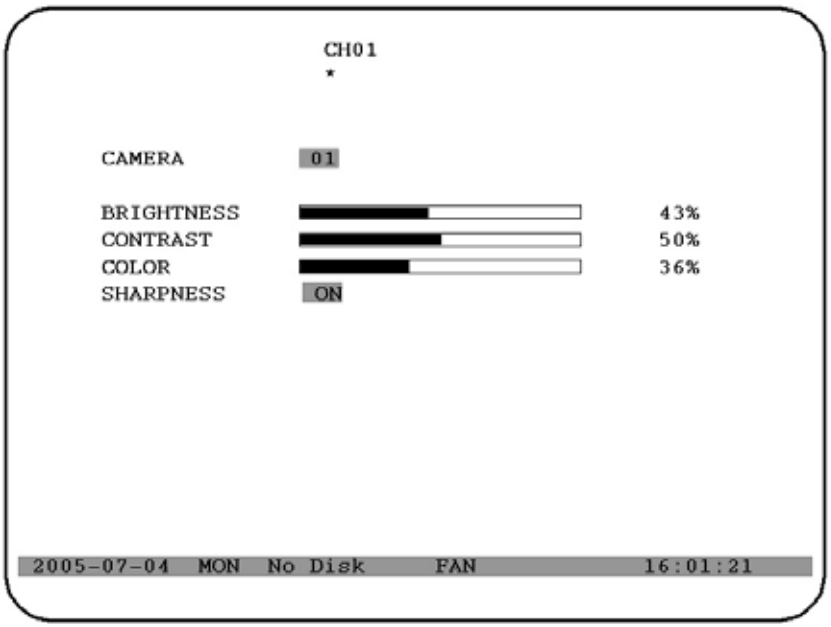


Diagram 8.1

In the screen display setting menu, we define:

1. **CAMERA:** The display setting of the current camera.
2. **BRIGHTNESS:** The brightness percentage of the current camera; from 0% to 100%.
3. **CONTRAST:** The contrast percentage of the current camera; from 0% to 100%.
4. **COLOR:** The color percentage of the current camera; from 0% to 100%.
5. **SHARPNESS:**

   By turning SHARPNESS **ON**, the image will become sharper and clearer in live mode. This option is suitable for indoor use.

When turning SHARPNESS **OFF**, the image becomes blurred in an indoor environment. However, this option is suitable for outdoor use. If image flickers under a bright, outdoor environment, then the image can become mild by turning SHARPNESS **OFF**.

The selected item will show in red color bar. Use **Jog** to increase or decrease the value. Press **ENTER** to confirm the setting value and move to next item. After finished setting, press **SELECT** or **MENU** key to save and exit the dialog.

- In a full screen display, pressing **ZOOM** button from front panel will allow you to zoom in the image. Dial Jog to move upward, downward, leftward or rightward of the zoomed in image. Press ENTER key to change direction ↑ ↓ or ← → . Press **ZOOM** button again to exit.

- In a multi screen display, pressing **ZOOM** button from front panel will enable you to do the following screen adjustment:

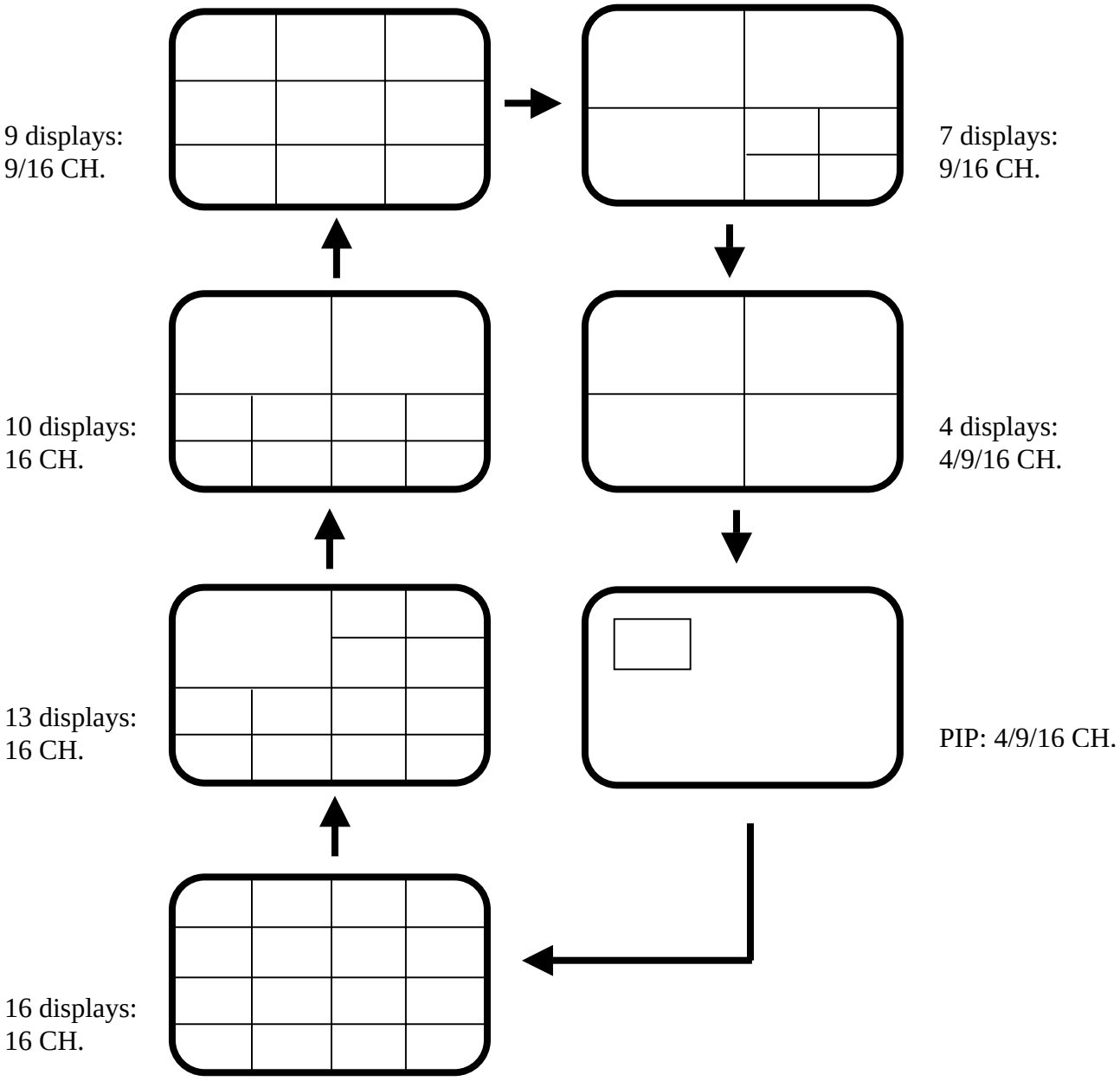
  ① Dial Jog to move upward, downward, leftward or rightward. Press ENTER key to change direction ↑ ↓ or ← →.

  ② Press **MODE** key to change resolution of VGA output. This does not influence BNC output.

  Press **ZOOM** button again to exit.

8.1 Mode Button

Press **MODE** to switch 4, 7, 9, 10, 13, 16 and PIP (picture in picture) displays for Live and Playback mode. (Note: PIP displays is not available in Playback mode).



Chapter

9

9. Upgrade Firmware

This chapter will try to give you a detailed instruction on how to upgrade the DVR. This will be helpful in completing the upgrading process.

1. Copy the .ETW to your USB pocket drive from your computer

2. Insert the USB pocket drive in to the USB slot on the front panel of the DVR. When inserting the USB, make sure the direction of insertion is correct.

3. If you are in Record mode hit the stop button to stop recording first.

4. If it cannot stop recording after pressing STOP button, please enter Schedule Setup Menu to turn schedule off.

5. Once you have stopped any type of recording on the DVR you are ready to upgrade.

6. Press the menu button and use the Jog Dial to go to “System” menu.

7. Using the enter button to navigate in the menu. Highlight “System Upgrade” turn NO to YES (use jog wheel to select).

8. Highlight “YES” again and press “Select” (use jog wheel to select).

9. Next to System Upgrade you will notice it says "1/3", progress status will be shown on the left-lower part of the screen, as 1/3 -> 2/3 -> 3/3.

10. Once the message “success, please reboot” pops up, log out of the menu by pressing the menu button twice and remove USB pocket drive. Then turn DVR’s power off and turn it back on.

Chapter

10

10. Networking Overview

This chapter will try to give you a detailed instruction on how to network the DVR. Before we begin the process of networking your digital recorder we should have a working knowledge of what a network is and how it works. This will be a helpful in completing the networking process.

10.1 Introduction to TCP/IP

TCP/IP is the suite of protocols used by the Internet and most LANs (Local Area Networks) throughout the world. In TCP/IP, every host (computer or other communications device) that is connected to the network has a unique IP address. By doing this you are giving your device a unique address similar to the address of your house. An IP address is composed of four octets (numbers in the range of 0 to 255) separated by decimal points. The IP address is used to uniquely identify a host or computer on the LAN. For example, a computer with the hostname Workstation could have an IP address of 192.168.1.127.

You should avoid giving two or more computers the same IP address by using the range of IP addresses that are reserved for private, local area networks; this range of IP addresses usually begins with the octets 192.168. The first three octets of an IP address should be the same for all computers in the local area network. For example, if a total of 253 computers exist in a single LAN, the IP addresses could be assigned starting with 192.168.1.*x*, where *x* represents a number in the range of 2 to 254.

10.2 Subnet Masks

Each host in a LAN has a subnet mask. The *subnet mask* is an octet that uses the number 255 to represent the network address portion of the IP address and a zero to identify the host portion of the address. For example, the subnet mask 255.255.255.0 is used by each host to determine which LAN or class it belongs to. The zero at the end of the subnet mask represents a unique host within that network. Basically the subnet mask represents the city you live in for your home address, but in this case you are stating the network you belong too.

10.3 Gateway Address

Each host in a LAN has a gateway. A gateway address is composed of four octets (numbers in the range of 0 to 255) separated by decimal points. The gateway address is used to uniquely identify a host or computer on the LAN which assigns the IP addresses to your network. For example, a Linksys router has an IP address of 192.168.1.1. If you were using this type of router within your LAN, then your gateway would be the IP address of the Linksys router. The reason this would be your gateway is because the Linksys is assigning the IP addresses for your network therefore the Linksys would be the gateway to your network. This is similar to the zip code of your address.

10.4 Virtual Ports

A **port number** represents an endpoint or "channel" for network communications. Port numbers allow different applications on the same computer to utilize network resources without interfering with each other. Port numbers most commonly appear in network programming, particularly socket programming. Sometimes, though, port numbers are made visible to the casual user. For example, some Web sites a person visits on the Internet use a URL like the following:

http://www.company.com:8100/

In this example, the number 8100 refers to the port number used by the Web browser to connect to the Web server. Normally, a Web site uses port number 80 and this number need not be included with the URL (although it can be). In IP networking, port numbers can theoretically range from 0 to 65535. Most popular network applications, though, use port numbers at the low end of the range (such as 80 for HTTP). This could be similar to the front door of your house. Without the door to the house being open you could not enter it. This is the same case with ports on a network. If the ports for a specific IP address are not open then you could not gain access to that IP address or what it is addressing.

> **Note:** The term port also refers to several other aspects of network technology. A port can refer to a physical connection point for peripheral devices such as serial, parallel, and USB ports. The term port also refers to certain Ethernet connection points, such as those on a hub, switch, or router.

10.5 Pre-Installation

Before we begin with the installation we must ask ourselves a few questions in order to figure out where to begin with networking our DVR's.

Do you have Hi-speed Internet? _____

There are many types of high speed Internet available. Three commonly used ones are T1, Cable, and DSL (in order of speed).

- **Note:** It is suggested to have a minimum upload speed of 256KBps. This can be addressed by the Internet Service Provider.

Who is your Internet provider? _____

- Please confirm that your internet service provider that our upload speed is at least 256KBps.

What type of modem/router do you have? _____
Modem/router model name/ #

The modem/router was either installed by your Internet service provider or purchased by you to establish a connection to the Internet. A router is installed to allow multiple computers to access the Internet through the same external IP address. It in turn assigns different internal IP addresses to local computers for this specific purpose.

Do you have a static IP address? _____

A Static IP address means you use the same IP address every time you log on to the Internet. With a static IP address, other Internet users always know the identity of your computer and can easily connect with it. That way, you can host a website, email server, or other type of server connection. It is suggested to use a static IP address. If your Internet provider does not offer a static IP address you have the option to use a dynamic IP address. This will be explained in more detail later on in the chapter.

Do you have a dynamic IP address? _____

A Dynamic IP address means your IP address changes each time you make a connection to the Internet. We recommend asking your Internet service provider for a Static IP address. If this is not a possibility, you may purchase a router (we suggest a Linksys or D-link router) which supports DDNS. DDNS is a Dynamic Domain Name Server, a service that provides a central (public) database where DNS information can be stored and retrieved. It allows those using a dynamic IP address to be registered centrally so users can connect to it by name.

What type of DVR are you installing? _____

Everfocus EDR series: EDR410, 810, 920, 1620 or 1640
Everfocus EDVR series: EDVR4F1, /EDVR4D1, EDVR9F1, EDVR9D1, EDVR16F1, EDVR16D1, EDVR16F2, EDVR16D2 or EDVR16D3.

10.6 What Type of Network Connection do you have?

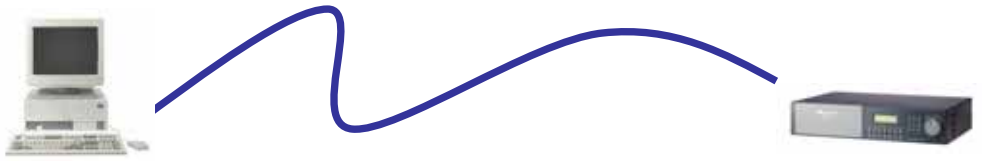
DVR's can operate using three distinct types of networking connections.

1. Simple One to One Connection: A simple one to one connection is the most simple network connection. Basically it is a connection between a Computer and Another Computer or in this case a DVR using a cross-over cable.

2. Direct High Speed Modem Connection: A direct high speed modem connection is a network connection from the modem directly to a computer or in this case the DVR.

3. Router or LAN Connection – A local area network connection either requires a router or a pre-existing LAN connection. Typically this type of connection is the most commonly used application. A router allows multiple computers and DVR's to access each other as well as the Internet. It assigns different internal IP addresses to the computers.

10.7 Simple One to One Connection



Cat 5
Cross-over-cable

Crossover Ethernet Cable Pin outs:
The Diagram below shows the pin configurations for a cross over cable.

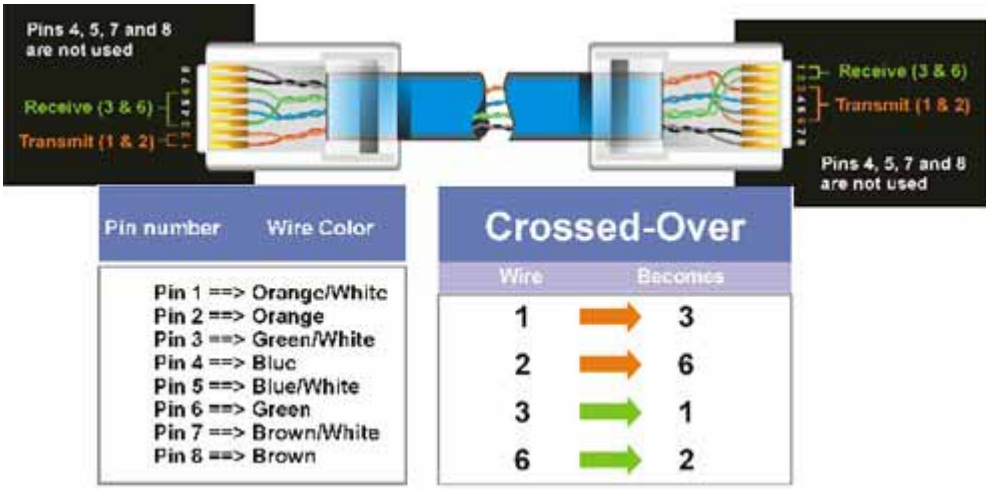


Diagram 10.1

Connection Procedure:

1. The First step is to purchase or make a cross over cable. We recommend purchasing one if you have never made a cross over cable. Please remember you can not use a straight through network cable for this application

2. Once you have a cross over cable plug one end into the LAN port on the back of the recorder and the other into the network card on the back of the computer.

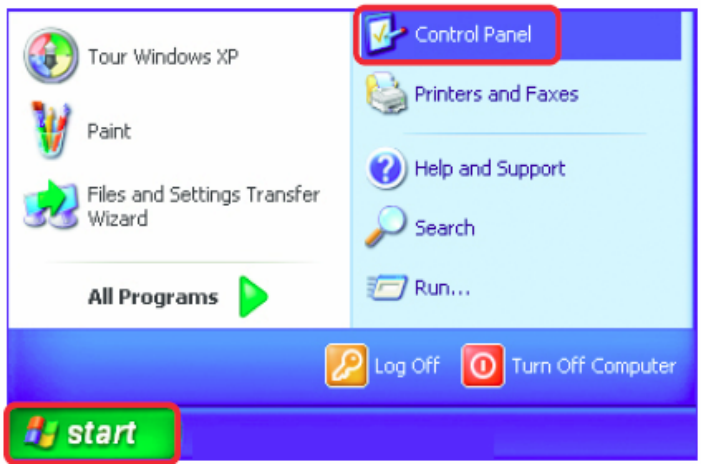
3. Now Log into the DVR menu and using the jog dial from the previous chapter go to the Network Setting Menu. (Please see **Network Setting Menu** for more instructions)

4. Assign an IP address of 192.168.001.003 to the DVR, a Subnet mask of 255.255.255.000, and a default gateway of 192.168.001.001.

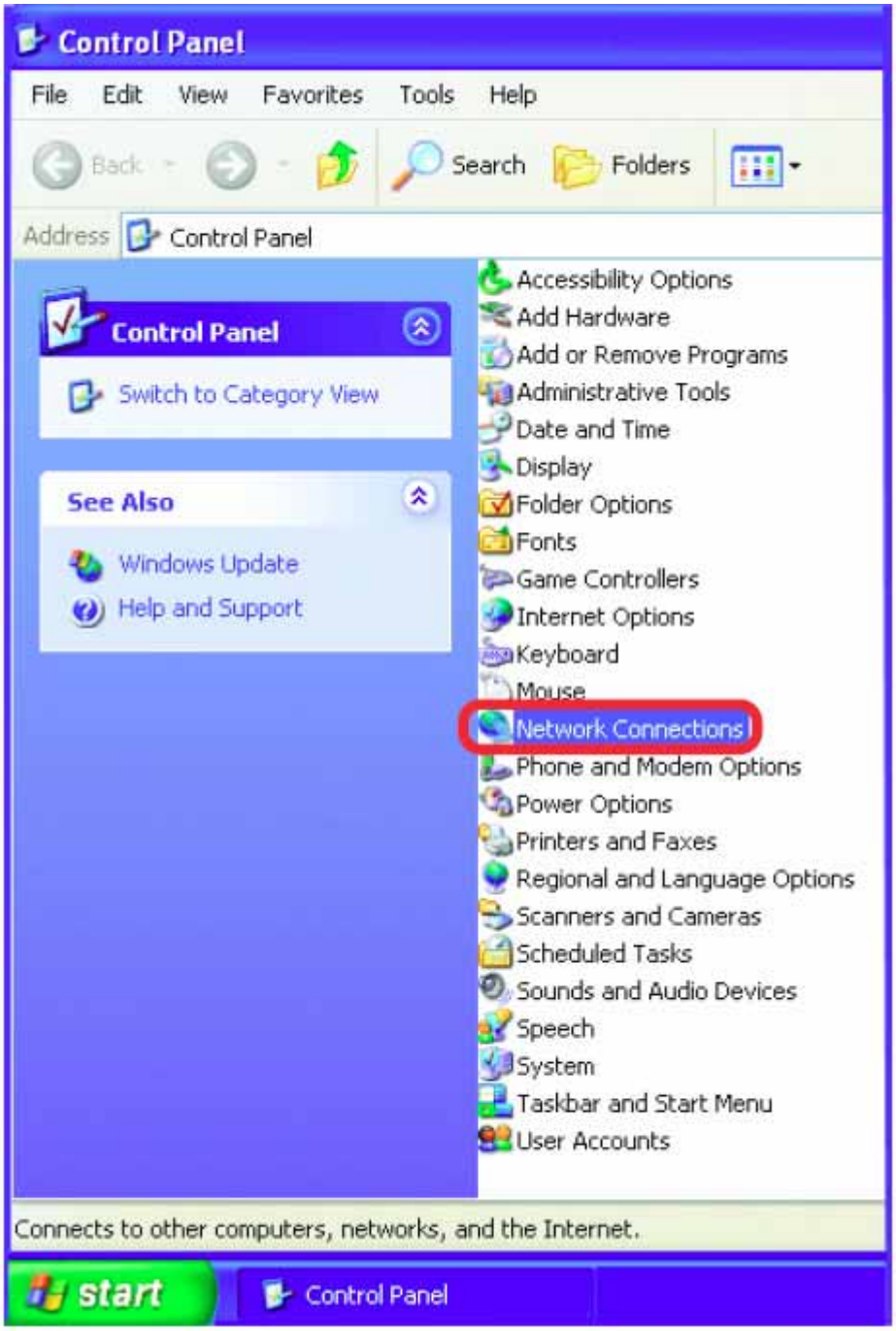
5. The next step is to get the computer onto the same network to do this you will need administrator access to your windows machine.

6. To assign a static IP address in windows 2000/XP.

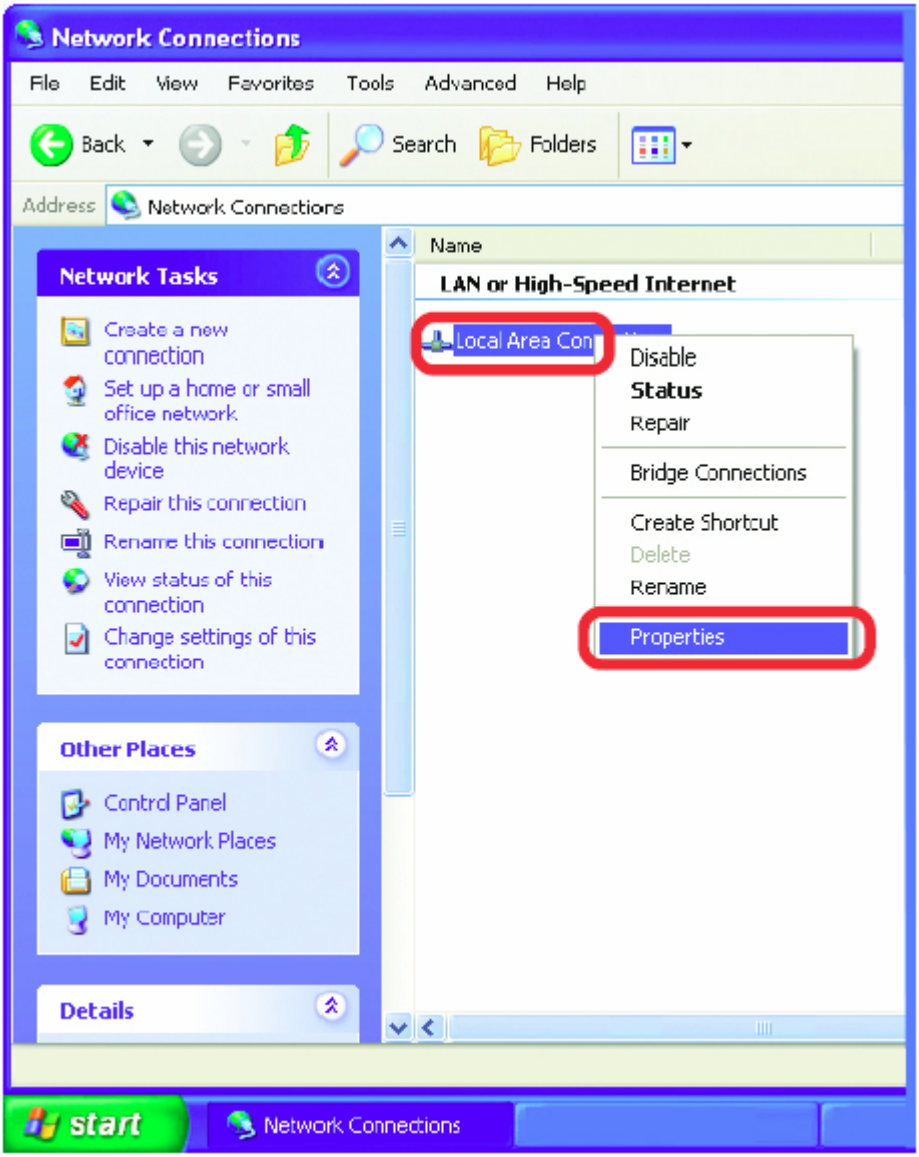
- Go to **Start**
- Double-click on **Control Panel**



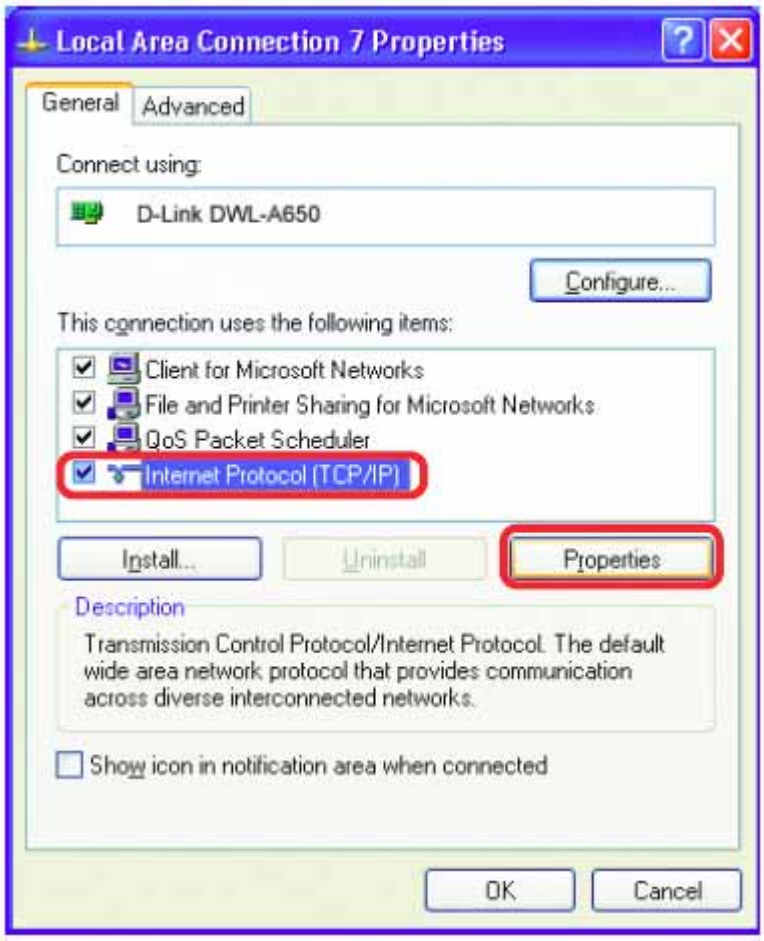
- Double-click on **Network Connections**



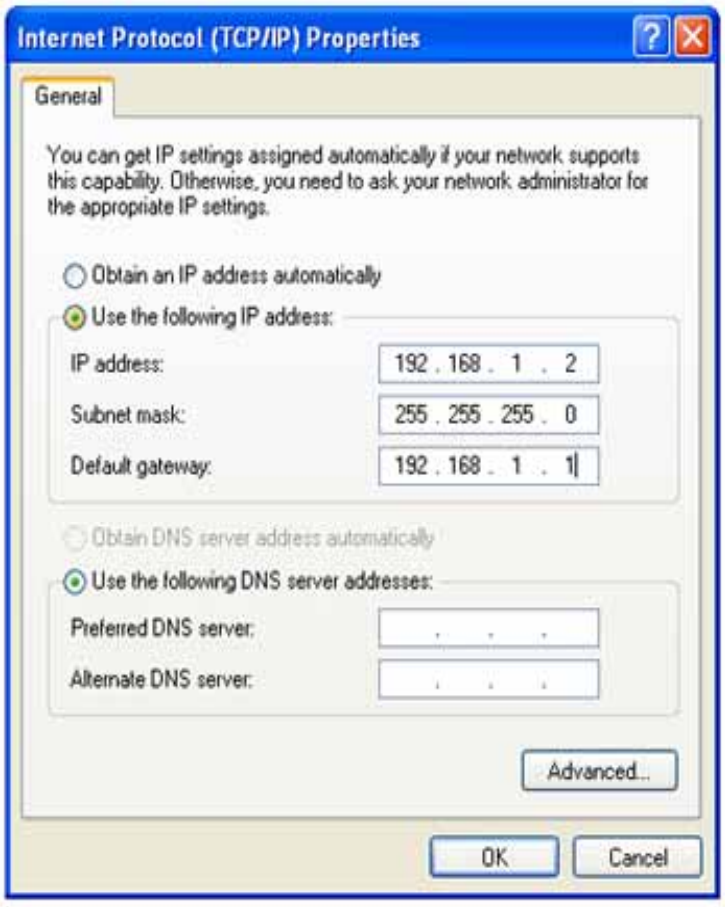
- Right-click on **Local Area Connections**



- Click on **Internet Protocol (TCP/IP)**
- Click **Properties**



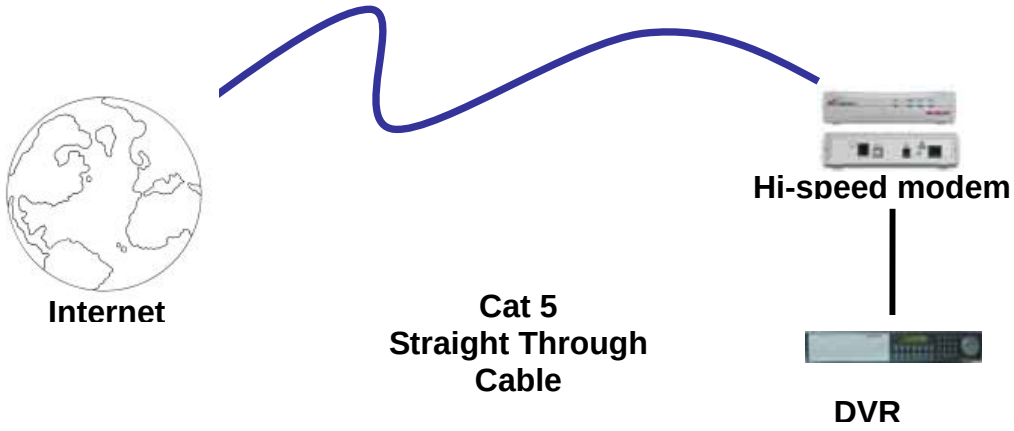
- Input your **IP address and subnet mask.** (The IP Addresses on your network must be within the same range.


Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address: 192 . 168 . 1 . 2
Subnet mask: 255 . 255 . 255 . 0
Default gateway: 192 . 168 . 1 . 1
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

7. Once you have reached this point click ok and restart both the computer and the digital recorder.

8. To access the DVR from the computer simply open Internet Explorer and in the address bar type:
   http://192.168.1.3

10.8 Direct High Speed Modem Connection



Straight Through Ethernet Cable Pin outs:

The Diagram below shows the pin configurations for a straight cable.

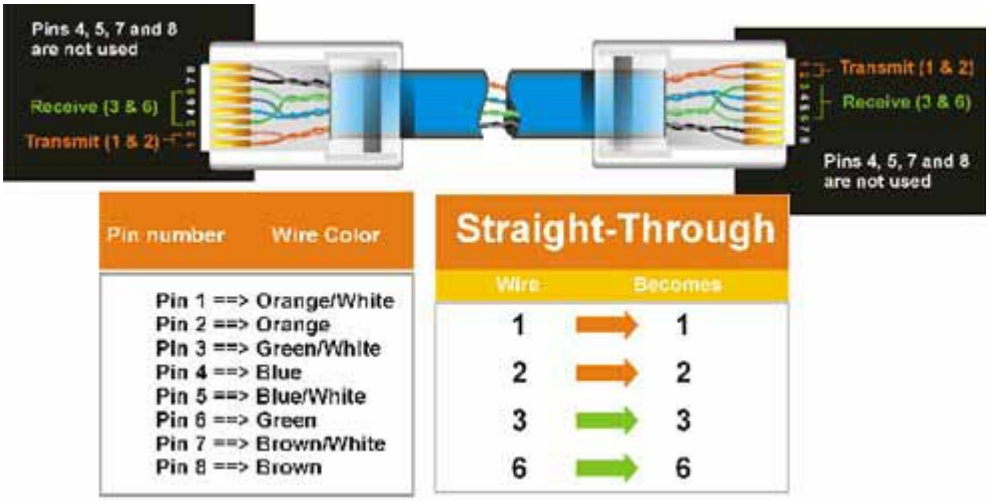


Diagram 10.2

Connection Procedure:

1. The First step is to purchase or make a straight through cable. We recommend purchasing one if you have never made a straight through cable. Please remember you can not use a cross over network cable for this application

2. Once you have a straight through cable plug one end into the LAN port on the back of the recorder and the other into the high speed modem.

3. Now Log into the DVR menu and using the jog dial from the previous chapter go to the Network Setting Menu.

4. Assign the Static IP address which you obtained from the internet service provider to the DVR, the Subnet mask from the internet service provider to the DVR, and the default gateway of the internet service provider.

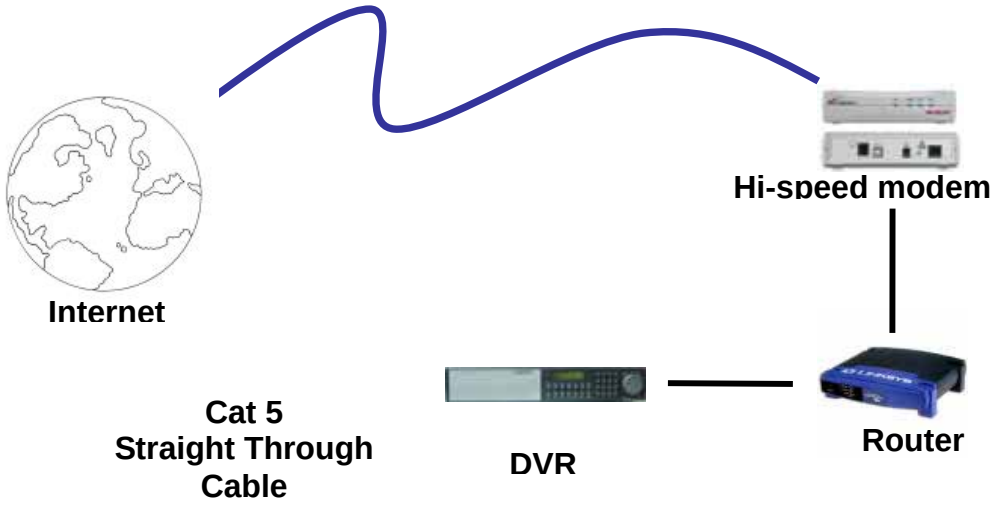
> **Note:** If you have a dynamic IP address this type of connection will not work for you. You will need to purchase a router or ask your internet service provider for a static IP address. (Please refer to local area network connection checklist)

5. Once you have reached this point click ok and restart both the computer and the digital recorder.

6. To access the DVR from a computer simply open Internet Explorer and in the address bar type:

   http:// and the IP address of your internet service provider.

10.9 Router or LAN Connection



Straight Through Ethernet Cable Pin outs:
The Diagram below shows the pin configurations for a straight cable.

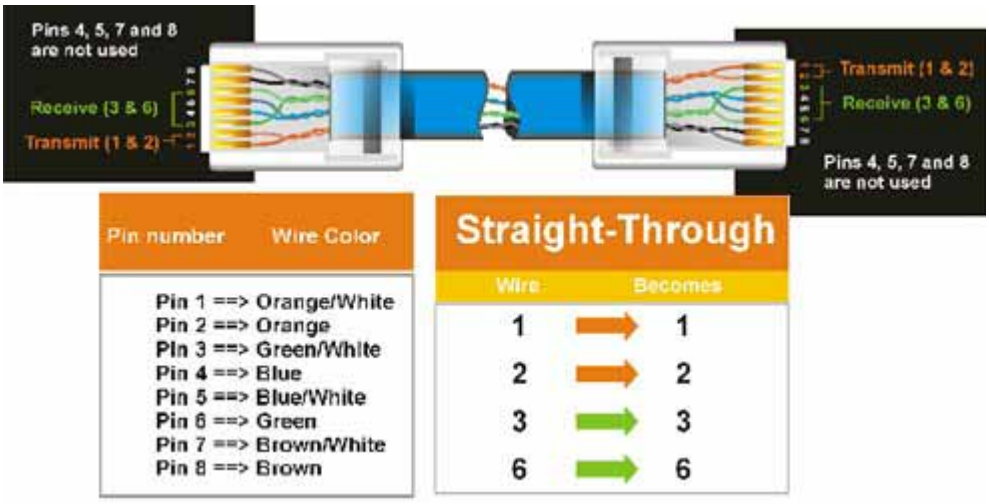


Diagram 10.3

Connection Procedure:

1. The First step is to purchase or make a straight through cable. We recommend purchasing one if you have never made a straight through cable. Please remember you can not use a cross over network cable for this application

2. Once you have a straight through cable plug one end into the LAN port on the back of the recorder and the other into the router.

3. Now Log into the DVR menu and using the jog dial from the previous chapter go to the Network Setting Menu.

4. If you have a Linksys Router:

    - Assign an IP address of 192.168.001.050 to the DVR, a Subnet mask of 255.255.255.000, and a default gateway of 192.168.001.001.

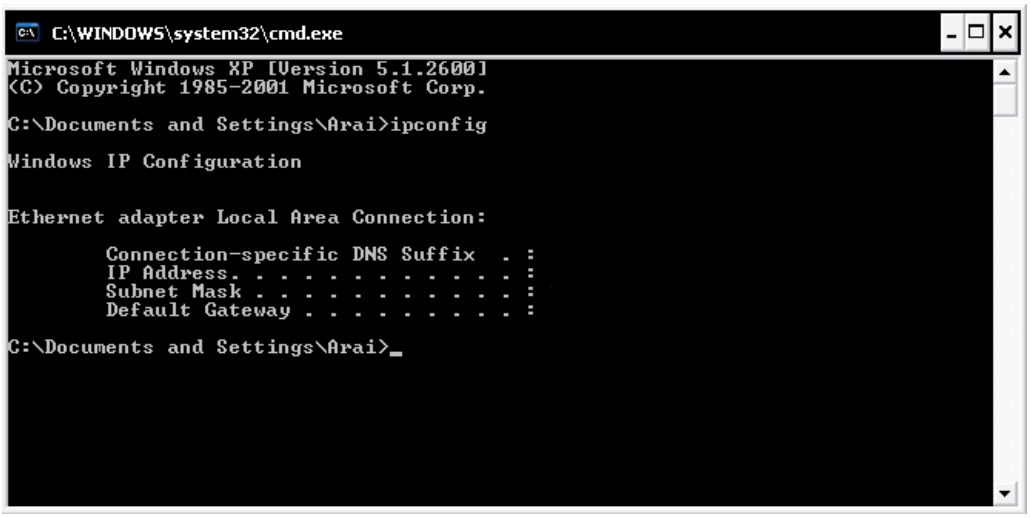
    If you have a D-Link Router:

    - Assign an IP address of 192.168.000.050 to the DVR, a Subnet mask of 255.255.255.000, and a default gateway of 192.168.000.001.

    If you have a pre-existing LAN:

    - Go to a Computer on the pre-existing network and do the following:
        - Go to Start, then Run and type cmd and click on OK.

    - Then hit enter, type ipconfig and press enter this will give you the information you will need.


C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.
C:\Documents and Settings\Arai>ipconfig
Windows IP Configuration
Ethernet adapter Local Area Connection:
Connection-specific DNS Suffix . :
IP Address. . . . . :
Subnet Mask . . . . . :
Default Gateway . . . . . :
C:\Documents and Settings\Arai>

- Use the prior step to assign an IP address. For example, if you got the IP address from the computer of 192.168.002.101. Assign the DVR's IP address as 192.168.002.050. Now Copy the subnet mask and default gateway information you got from the prior step off the computer to the DVR.

- **Note:** Make sure the modem is in bridge mode. If your Internet Service Provider is BellSouth you will have a modem/router. BellSouth provides a Westell modem that includes a built-in router. You will need to disable the router functionality.

5. The next step is to open ports within your router. Open virtual ports in the router (Log into the router using a PC)

    - EDVR Ports to open: 80, 1600, 37260, 37261, 37262, 37263

    - **Note:** If your Internet service provider blocks port 80 you may use a different port to access the DVR through the DVR's Network Menu Setup.

    - **Note:** If you wish to have multiple users log into the DVR please open a range for the control and data ports on your router. For example if you would only like 4 clients to connect to the DVR open 1600 and 37260 ~ 37263.

    - If you have a Dynamic IP address and have open the ports simply go to Chapter 9 to Configure DDNS.

    - Once you have reached this point and you have restarted the digital recorder.

6. To access the DVR from a computer simply open Internet Explorer and in the address bar type:

   http:// and the IP address of your internet service provider.

   - **Note:** If your Internet service provider blocks port 80 you may use a different port to access the DVR through the DVR's Network Menu Setup.

Chapter

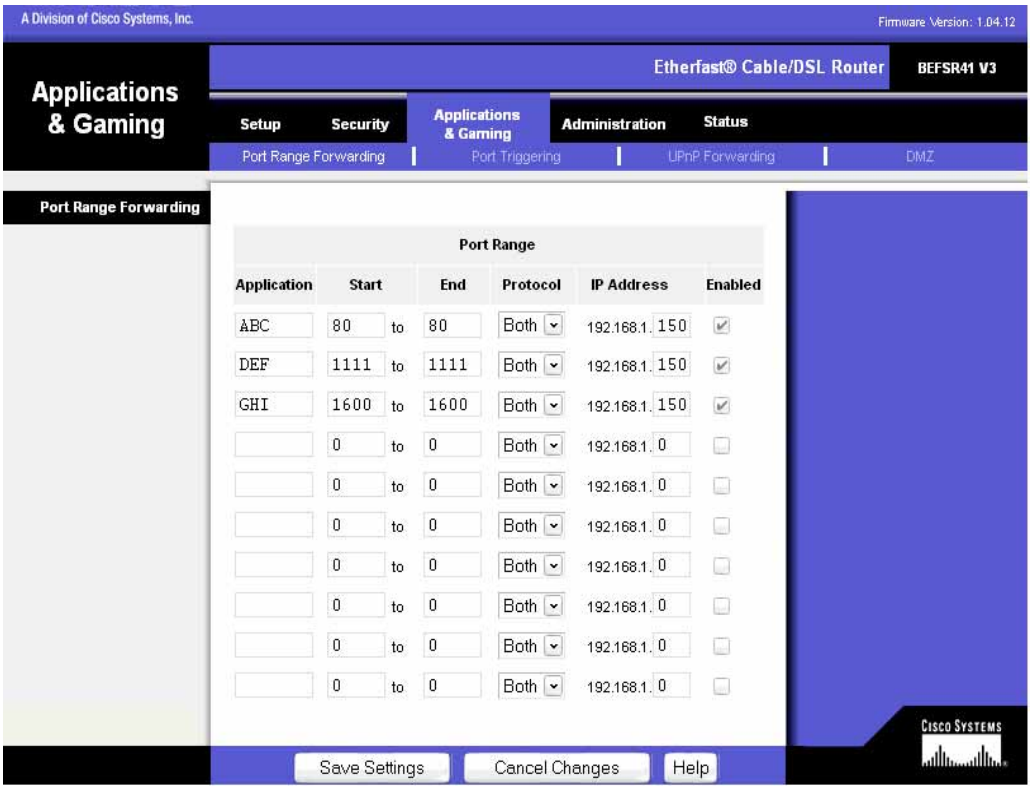
11

11. Linksys Port Forwarding

This chapter will cover a few simple configurations for the Linksys router. Please understand we do not support this product and will not give tech support on it. If you need Technical support on this router you must call Linksys. This Chapter is to offer some help to the installer and end user nothing more.

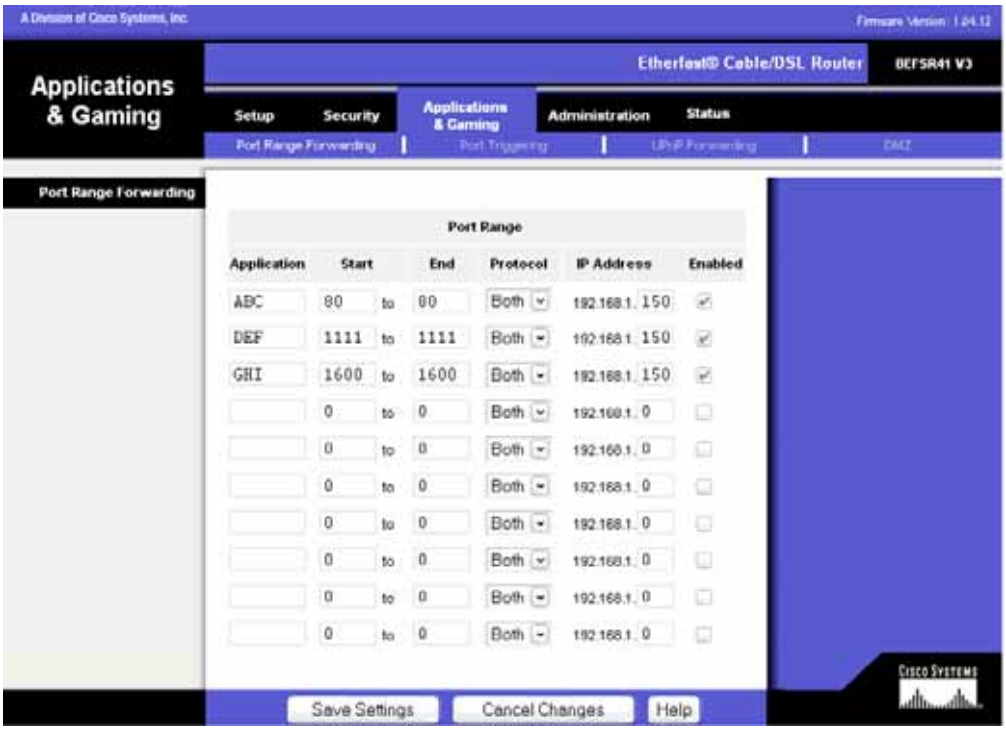
To access the Web-based Utility, launch Internet Explorer or Netscape Navigator, and enter the Router's default IP address, **192.168.1.1**, in the *Address* field. Then, press **Enter**. A password request page will appear. (Non-Windows XP users will see a similar screen.) Leave the *User Name* field blank. The first time you open the Web-based Utility, use the default password **admin**. (You can set a new password from the Administration tab's *Management* screen.) Click the **OK** button to continue.

The first screen that appears displays the Setup tab. This allows you to change the Router's general settings. Change these settings as described here and click the **Save Settings** button to apply your changes or **Cancel Changes** to cancel your changes.



The Applications and Gaming Tab allows you to set up public services on your network, such as web servers, ftp servers, e-mail servers, or other specialized Internet applications. (Specialized Internet applications are any applications that use Internet access to perform functions such as videoconferencing or online gaming. Some Internet applications may not require any forwarding.)

To forward a port, enter the information on each line for the criteria required. Descriptions of each criteria are described here.



Application - In this field, enter the name you wish to give the application. Each name can be up to 12 characters.

Start/End - This is the port range. Enter the number that starts the port range under **Start** and the number that ends the range under **End**.

Protocol - Enter the protocol used for this application, either **TCP** or **UDP**, or **Both**.

IP Address - For each application, enter the IP Address of the PC running the specific application.

Enable - Click the **Enable** checkbox to enable port forwarding for the relevant application.

Change these settings as described here and click the **Save Settings** button to apply your changes or **Cancel Changes** to cancel your changes.

Example:

DVR	80 to 80	Both	192.168.1.50	Enable
DVR	1600 to 1600	Both	192.168.1.50	Enable

DVR	37260 to 37260	Both	192.168.1.50	Enable

- **Note:** If your Internet service provider blocks port 80 and you are using a different port to access the DVR through the DVR's Network Menu Setup please open those specific ports in this section of the router.

The following is the address you would type:

http:// IP address of your internet service provider: 8100

Dynamic DNS

The Router offers a Dynamic Domain Name System (DDNS) feature. DDNS lets you assign a fixed host and domain name to a dynamic Internet IP address. It is useful when you are hosting your own website, FTP server, or other server behind the Router. Before you can use this feature, you need to sign up for DDNS service at www.dyndns.org, DDNS service providers.

DDNS Service - From this pull-down menu, enter the DDNS service with which you have membership.

User Name - Enter the User Name for your DDNS account.

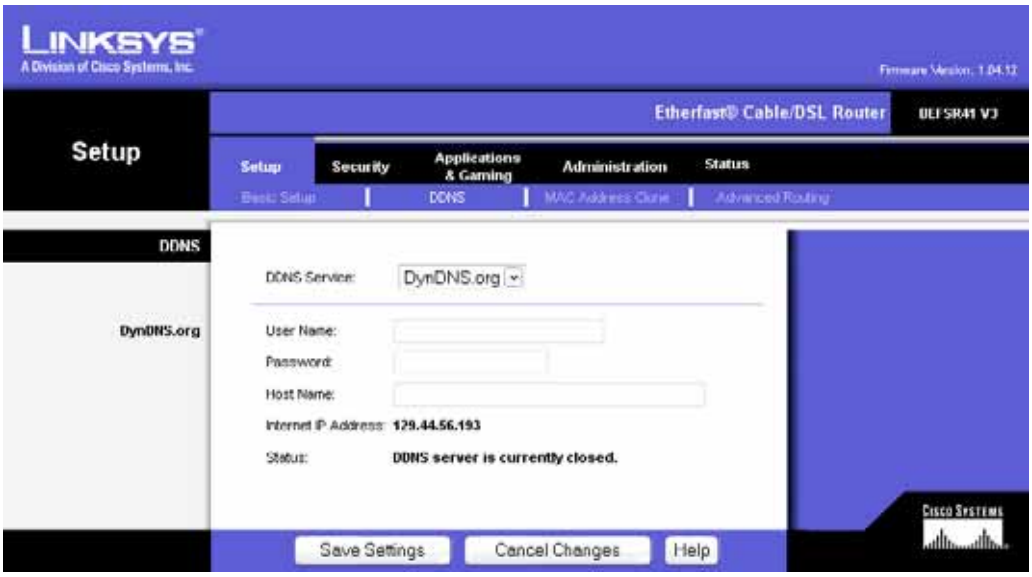
Password - Enter the Password for your DDNS account.

Host Name - There is the DDNS URL assigned by the DDNS service.

Internet IP Address - This is the Router's current IP Address as seen on the Internet.

Status - This displays the status of the DDNS connection.

Change these settings as described here and click the **Save Settings** button to apply your changes or **Cancel Changes** to cancel your changes.


LINKSYS
A Division of Cisco Systems, Inc.
Firmware Version: 1.04.12
Etherfast® Cable/DSL Router
BEFSR41 V3
Setup
Setup
Security
Applications & Gaming
Administration
Status
Basic Setup
DDNS
MAC Address Clone
Advanced Routing
DDNS
DynDNS.org
DDNS Service:
DynDNS.org
User Name:
Password:
Host Name:
Internet IP Address:
129.44.56.193
Status:
DDNS server is currently closed.
Cisco Systems
Save Settings
Cancel Changes
Help

Chapter

12

12. D-Link Port Forwarding

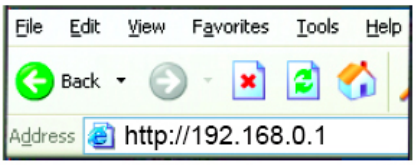
This chapter will cover a few simple configurations for the D-Link router. Please understand we do not support this product and will not give tech support on it. If you need Technical support on this router you must call D-Link. This Chapter is to offer some help to the installer and end user nothing more.

Whenever you want to configure your network or the DI-624, you can access the Configuration Menu by opening the web-browser and typing in the IP Address of the DI-624. The DI-624 default IP Address is shown at right:

- Open the web browser
- Type in the **IP Address** of the Router (http://192.168.0.1)

Note: if you have changed the default IP Address assigned to the DI-624, make sure to enter the correct IP Address.

- Type **admin** in the **User Name** field
- Leave the **Password** blank
- Click **OK**



1. The next step is to open ports within your router. Go to Virtual Server in the router.

Example1:

Protocol Type
The protocol used for the virtual service.

Public Port
The port number on the WAN (Wide Area Network) side that will be used to access the virtual service.

Private Port
The port number of the service used by the Private IP computer.

Schedule
The schedule of time when the virtual service will be enabled.
The schedule may be set to **Always**, which will allow the particular service to always be enabled. If it is set to **Time**, select the time frame for the service to be enabled. If the system time is outside of the scheduled time, the service will be disabled.

Virtual Server
Select **Enabled** or **Disabled**

Name
Enter the name referencing the virtual service

Private IP
The server computer in the LAN (Local Area Network) that will be providing the virtual services. If you have a Web server that you wanted Internet users to access at all times, you would need to enable it. Web (HTTP) server is on LAN (Local Area Network) computer

192.168.0.50 HTTP uses port 80, TCP and UDP.

Name: DVR
Private IP: 192.168.0.50
Protocol Type: Both
Private Port: 80
Public Port: 80
Schedule: always

2. The next step is to open ports within your router. Open virtual ports in the router.

    - EDR Ports to open: 80, 1600, 37260, 37261, 37262, 37263

    - **Note:** If your Internet service provider blocks port 80 and you are using a different port to access the DVR through the DVR's Network Menu Setup please open those specific ports in this section of the router.

3. If your Internet Service Provider Blocks port 80. Simply do the following:

    - Change the HTTP port from 80 to 8100 in the **NETWORK MENU.**

4. To access the DVR from a computer simply open Internet Explorer and in the address bar type:

    The following is the address you would type:

    http:// IP address of your internet service provider: 8100

Dynamic DNS

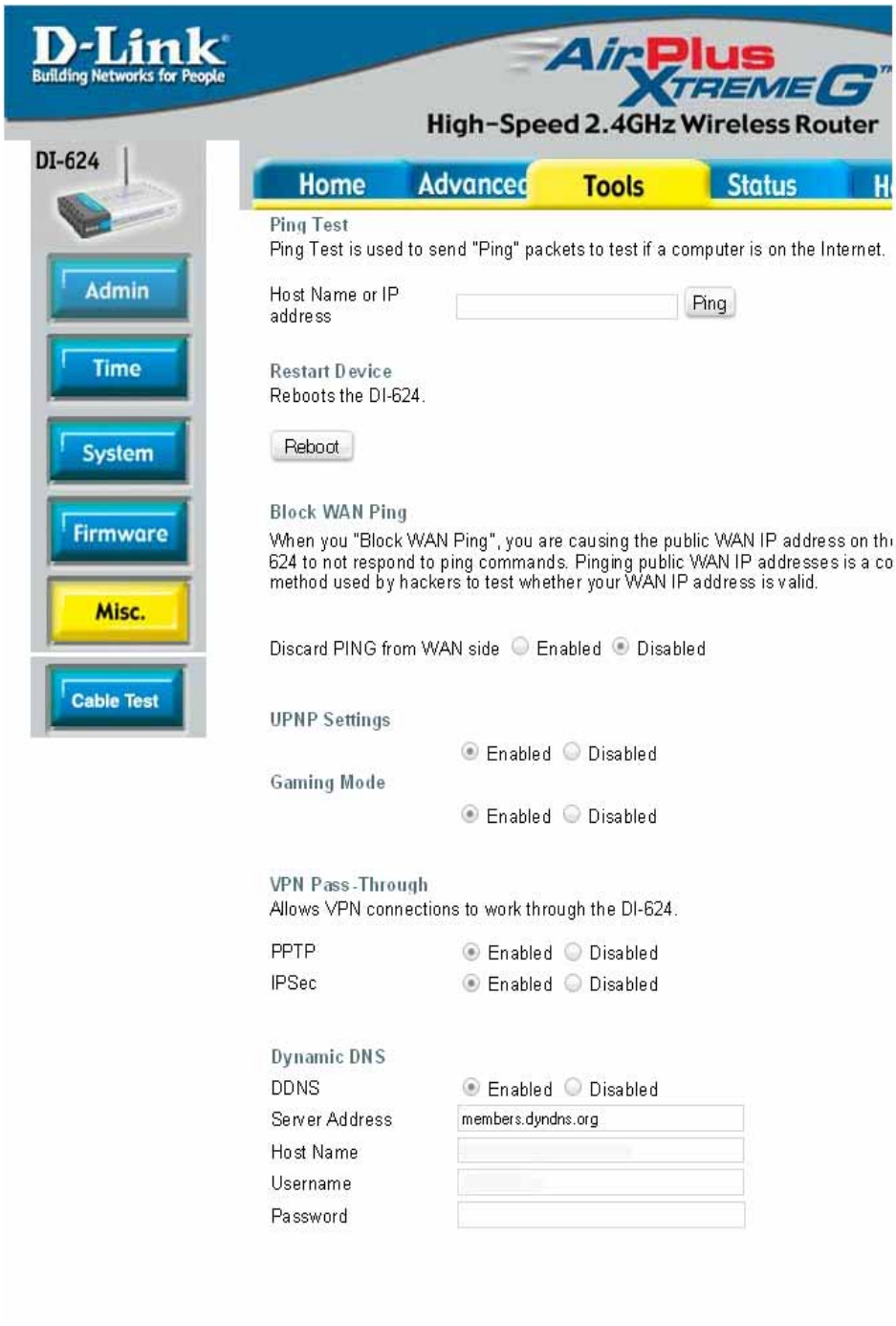
Dynamic Domain Name System is a method of keeping a domain name linked to a changing IP Address. This is a useful feature since many computers do not use a static IP address.

1. To setup Dynamic DNS simple go to Tools and the Misc. At the bottom of the screen you will be able to enable DynDNS.

2. Once you have enabled it enter the server address of DynDNS.org:
   members.dyndns.org

3. Then enter the hostname you created with DynDNS.org
   Example: company.homeip.net

4. Then enter the username and password you use to log into DynDNS.org


D-Link
Building Networks for People
AirPlus XTREME G
High-Speed 2.4GHz Wireless Router
DI-624
Home
Advanced
Tools
Status
Admin
Time
System
Firmware
Misc.
Cable Test
Ping Test
Ping Test is used to send "Ping" packets to test if a computer is on the Internet.
Host Name or IP address
Ping
Restart Device
Reboots the DI-624.
Reboot
Block WAN Ping
When you "Block WAN Ping", you are causing the public WAN IP address on th
624 to not respond to ping commands. Pinging public WAN IP addresses is a co
method used by hackers to test whether your WAN IP address is valid.
Discard PING from WAN side Enabled Disabled
UPNP Settings
Enabled Disabled
Gaming Mode
Enabled Disabled
VPN Pass-Through
Allows VPN connections to work through the DI-624.
PPTP Enabled Disabled
IPSec Enabled Disabled
Dynamic DNS
DDNS Enabled Disabled
Server Address members.dyndns.org
Host Name
Username
Password

Chapter

13

13. DDNS

This chapter will cover a few simple configurations for setting up DDNS. Please understand we do not support this product and will not give tech support on it. If you need Technical support on DDNS you must call Linksys or D-Link. This Chapter is to offer some help to the installer and end user nothing more.

13.1 Creating a DDNS Account

1. The first step is to open Internet Explorer and in the address bar type:

   http://www.dyndns.com

2. The next step is to register with dyndns.com by clicking on sign up now.

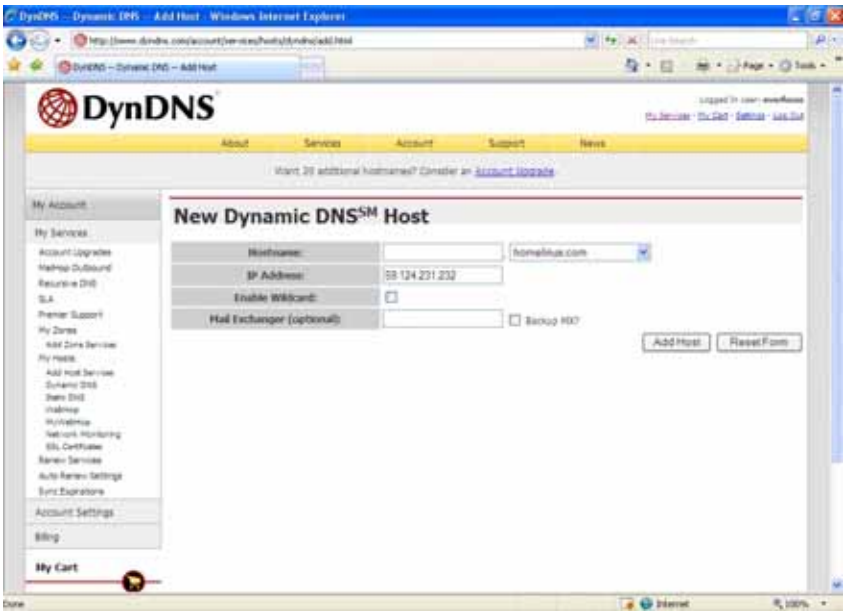
3. This is where you file out the information DynDNS requires. You will then receive an email to confirm your account once you confirm you will login into DynDNS.com.

4. After you have logged in click on click on the account tab and the click on Add Host link right next to Dynamic DNS.

5. The next step is to add a host name with an extension.
   Example: Company.homeip.net

6. The IP address should already be entered for you. All you have to do is click add host and you are done registering DDNS.

7. You may refer to the previous two chapters to set up DDNS within your router.



8. To access the DVR from a computer simply open Internet Explorer and in the address bar type:

   http:// The DDNS you created example company.homeip.net

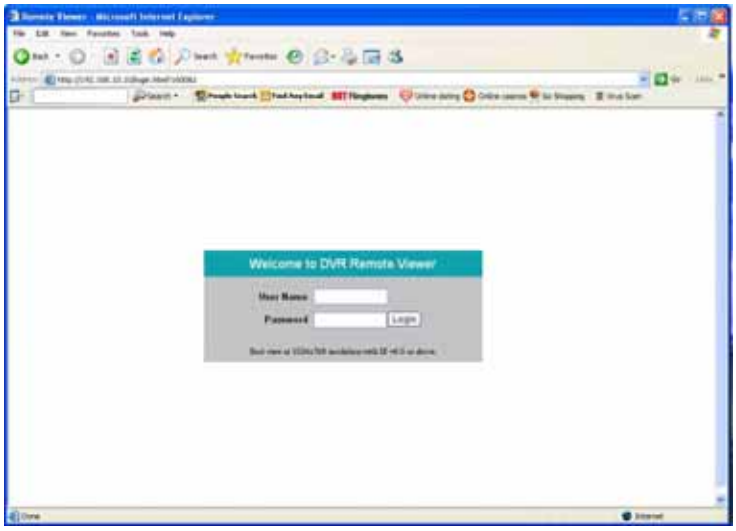
Chapter

14

14. Viewing through Internet Explorer

1. To access the DVR from a computer simply open Internet Explorer and in the address bar type:

   http:// (LAN or IP address of your internet service provider)



2. The digital video login page will appear on the screen similar to the one shown above.

3. User must enter a user name and password to access the recorder. You can find your user name and password in the Network setting menu of your DVR.

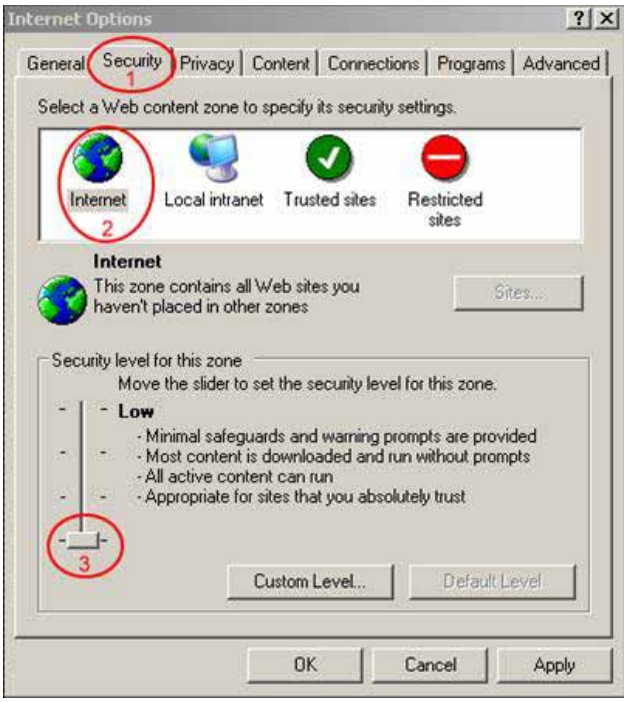
4. The Default user name and password are admin and 11111111. (Remote user ID and Password can be found in the Network Menu)

5. Then click on the submit button and you will be logged into your recorder.

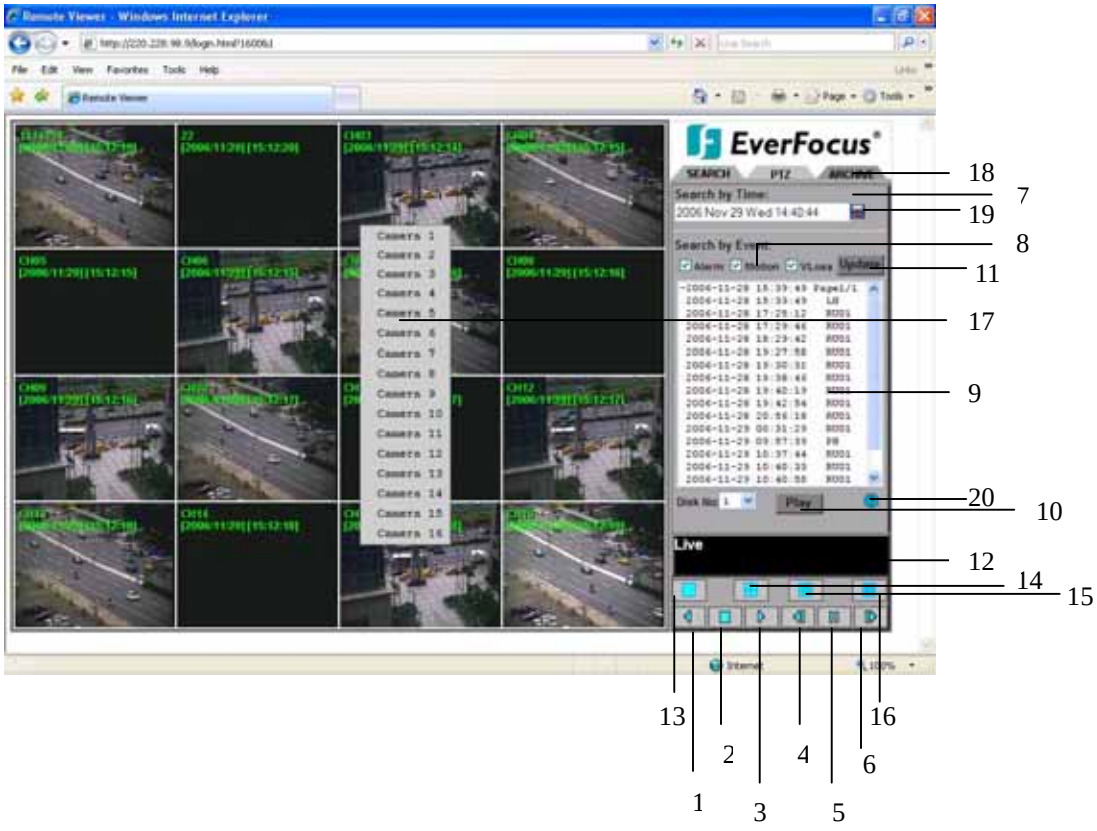
Microsoft Internet Explorer
Your current security settings prohibit running ActiveX controls on this page. As a result, the page may not display correctly.
OK

If the above error message pops up when you connect to EDR for viewing from internet, you should change Internet Option of IE (browser) to enable ActiveX controls.

Select **Tools** -> **Internet Options…**



Please refer to the above steps for changing **Security Options** to **Low**.



The above diagram is the main screen display.
The icons on the lower corner of the screen are mainly for control and configuration; those on the right corner are for status indication.
If any icon is grayed, it means that the specific function is not accessible in the current mode.
The followings are a brief description for each of the icons.

1. **REV. PLAY:** Reverse Video Playback**.**
2. **STOP:** Press this key to stop Video Playback**.**
3. **PLAY:** Play back the Video display**.**
4. **STEP FORWARD:** the Video Playback display**.**
5. **PAUSE:** To pause the Video Playback display**.**
6. **STEP BACKWARD:** the Video Playback display**.**

7. The system allows up to 2 ways to playback video, by **EVENT LIST** and **Time.**

8. Events to be searched: **Alarm**, **Motion** and **Vloss**.

9. All available events are shown in the list. Select the desired event and it will be highlighted.

10. Click on "**Play**" to playback selected video event.

11. Press "**Update**" to refresh the event list.

12. Current connection and playback status are shown along with date and time.

13. Full screen view.

14. Quad screen view.

15. Nine split screen view.

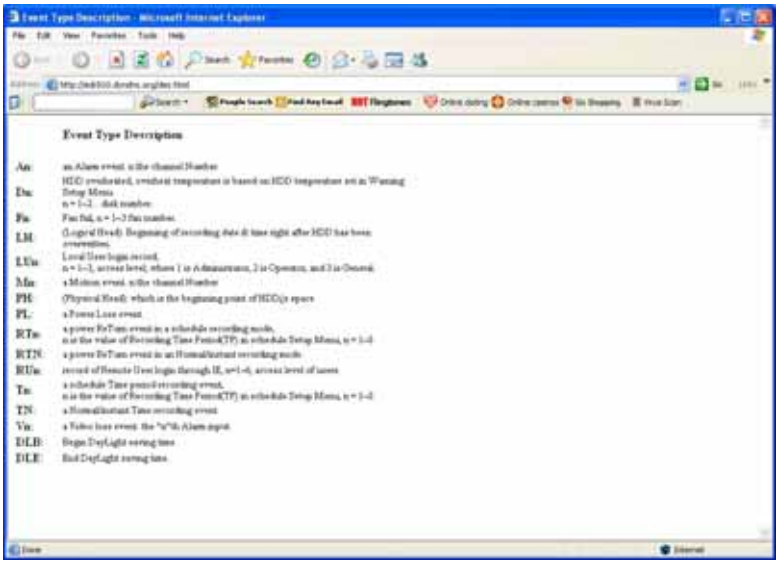
16. Sixteen split screen view.

17. A pop-up menu to select camera to view will be shown by right-clicking the mouse.

18. There are 3 main functions of Remote Viewer: **SEARCH**, **PTZ** and **ARCHIVE**. **SEARCH** section allows you to search by event or by time. **PTZ** section allows you to do PTZ control. **ARCHIVE** section allows you to archive files or download DVRViewer.

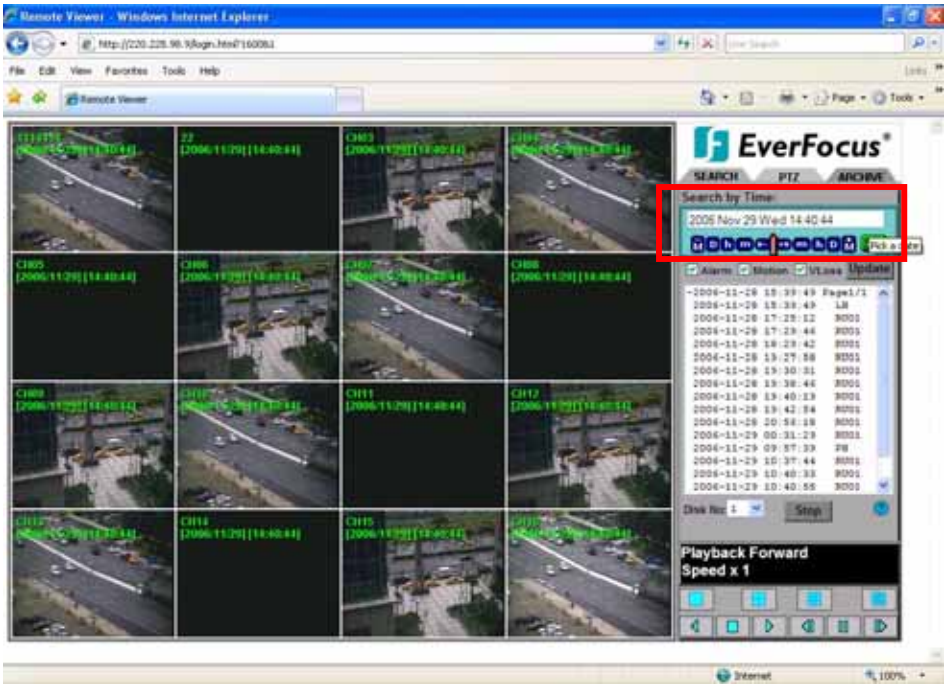
19. **Pick a date** allows you to search by time in a more convenient way.

20. **Event Description:** By clicking on the ⑦ sign, an event description list will show up as follow:



14.1 Search

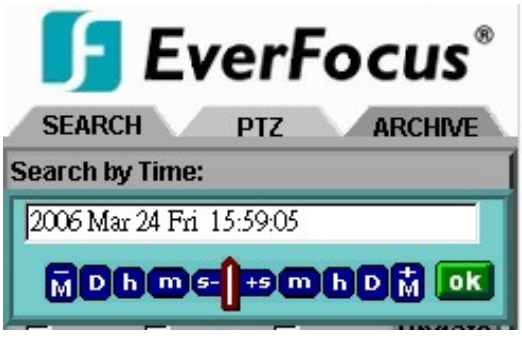
14.1.1 Search by TIME



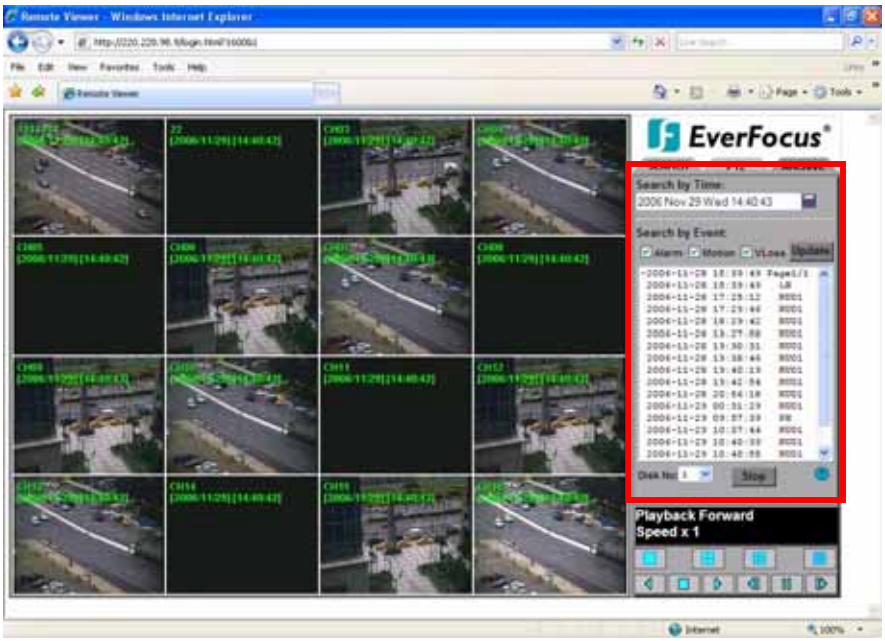
There are 3 ways to do search by time. Press **Pick a date** first.

1. Press the button of **M** for changing Month to be searched, **D** for day, **h** for hour, **m** for minute and **s** for second. The "-" sign at the left-hand side is to decrease the value, whereas the "+" sign at the right-hand side is to increase the value.
2. Move the slide bar between the buttons to change Month, Day, Hour, Minute, and second to be searched. Move the slide bar to the left-hand side for increasing the value, or right-hand side for decreasing the value.
3. Enter Month, Day, Hour, Minute, and second directly in display bar.

Press **OK** to start searching.



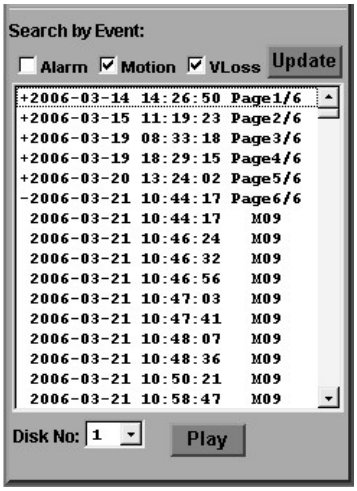
14.1.2 Search by EVENT



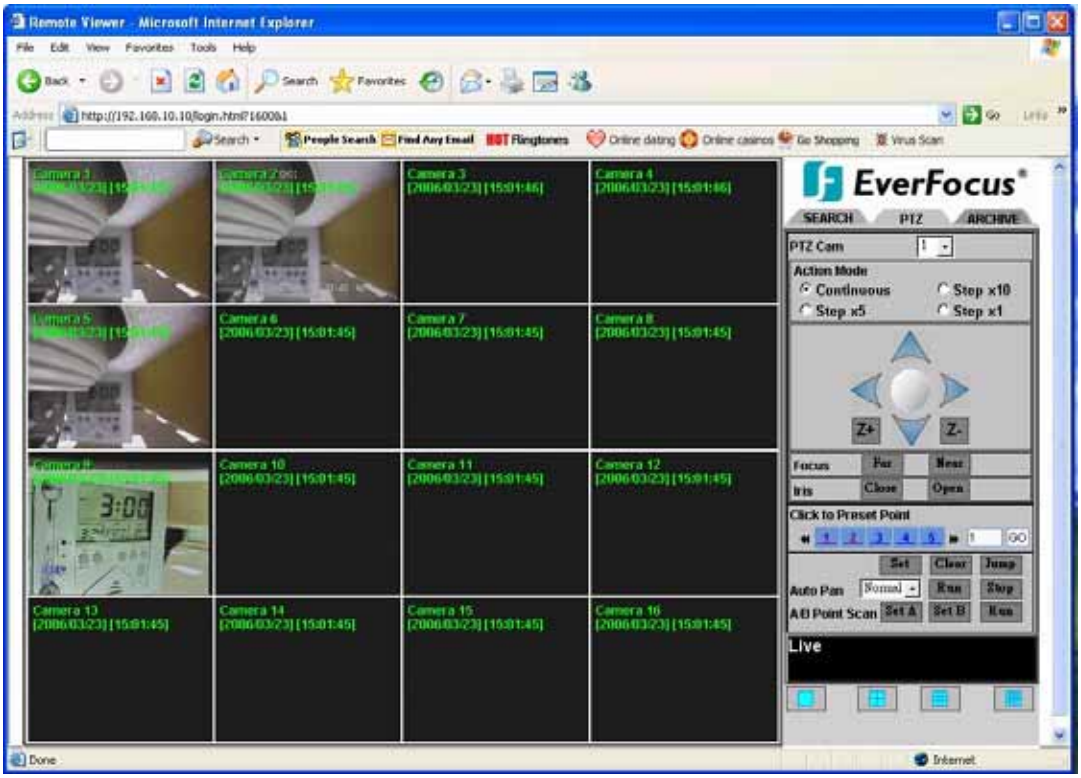
1. Select Event Type from **Alarm**, **Motion** and **Vloss**.

   Note: Please keep at least one event type checked.

2. Press **Update** button to refresh the event list.
3. All events of the selected type will be displaying along with Date/Time, event type (represents by a capital letter), camera number (represents by a number), e.g. M02 is the motion event from camera 2.
4. When there is a "+" sign in front of the date with page number at the end, it means that you can go to that page for showing the events of that page.
5. Select the **Disk No.** from which you would like to search events.
6. Press **Play** button to playback the selected event.

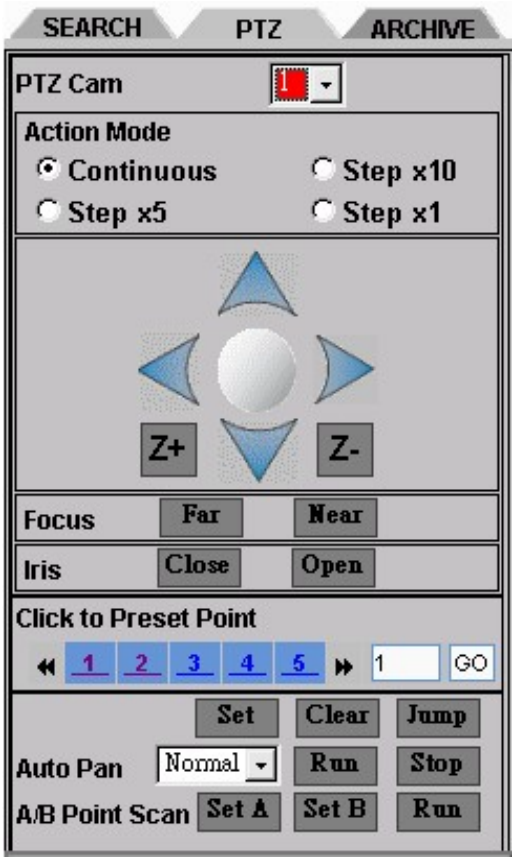


14.2 PTZ control

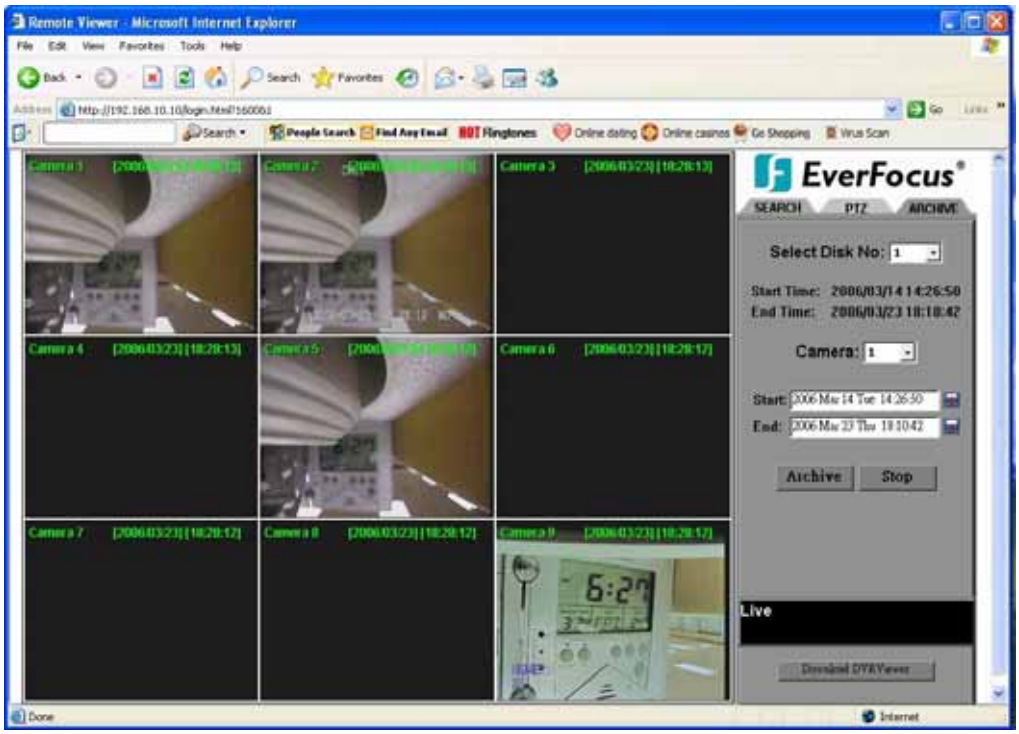


1. Select the PTZ camera from drop-down menu.
2. Select **Action Mode**. 4 options are available: **Continuous**, **Step x10**, **Step x5** and **Step x1**.
3. Use Direction Arrows (up, down, left, right) to move/adjust the focus to your desired direction and angle.
4. Press **Z+** for Zooming In or **Z-** for Zooming Out.
5. In **Focus** option, press **Near** to move the focus closer to the subject. Or you can move the focus farther from the subject by pressing **Far**.
6. You can turn on the **Iris** by pressing **Open** or turn it off by pressing **Close**.
7. "**Click to Preset Point**" helps you to define the preset point at which you would like to see the subject. Press **Set** for confirmation, **Clear** to exit or **Jump** to jump to a specific point.
8. "**Auto Pan**" is to define the speed of PTZ camera when moving horizontally, please select from **Slower**, **Slow**, **Normal**, **Fast** to **Faster**. Press **Run** for confirmation or **Stop** to exit.

9. A/B Point Scan allows you to do tour between 2 points. Move to the first point by using direction arrows and press **SET A**. Then move to the second point by using direction arrows and press **SET B**. Press **RUN** to start A/B Point Scan.



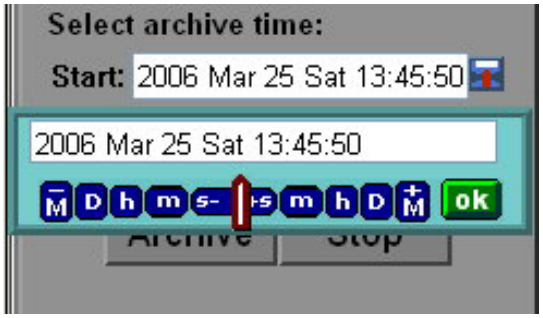
14.3 Remote Archive



To Archive files:

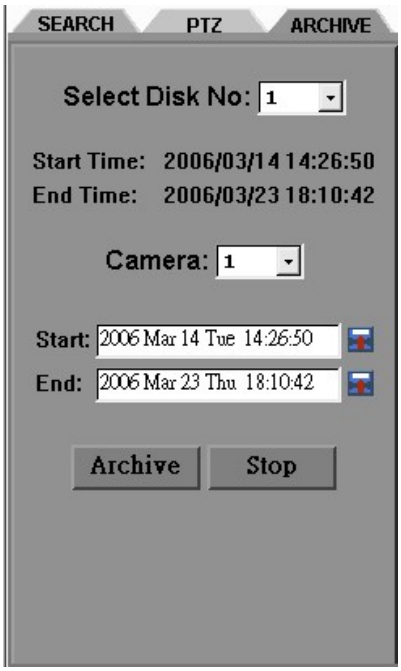
1. **Select Disk No**.
2. **Start Time/End Time** indicates the start and end time of the disk selected
3. **Camera:** Select the camera that you wish to archive files.
4. **Start:** Select the start time to be archived.
5. **END:** Select the end time to be archived.

There are 3 ways to search either **Start** or **End** time to be archived. Press first.



1) Press on the button of **M** for changing Month to be searched, **D** for day, **h** for hour, **m** for minute and **s** for second. The "-" sign at the left-hand side is to decrease the value, whereas the "+" sign at the right-hand side is to increase the value. Press OK
2) Move the slide bar between the buttons to change Month, Day, Hour, Minute, and second to be searched. Move the slide bar to the left-hand side for increasing the value, or right-hand side for decreasing the value.
3) Enter Month, Day, Hour, Minute, and second directly in display bar.
4) Press **OK** to start searching.

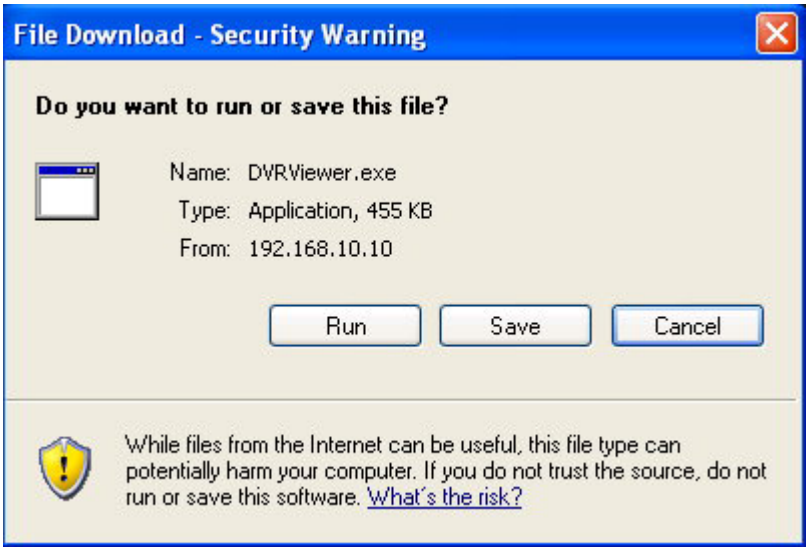
6. Press **ARCHIVE** button to start archiving. A "**.arv"** file will be saved.
7. Press **STOP** button if you wish to cancel archiving.



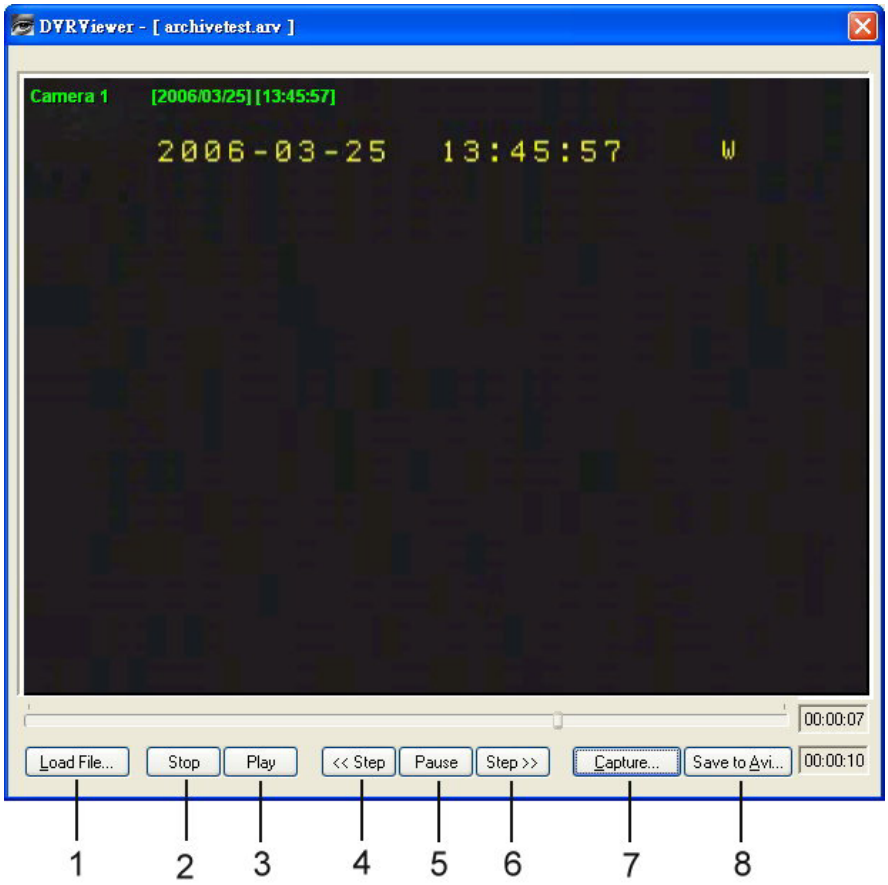
In order to read the archived EDR MPEG4 Files (.arv), you would need to download viewer:

1. Press **Download DVRViewer** button.

2. Select "**Run**" or "**Save**" the file.


File Download - Security Warning
Do you want to run or save this file?
Name: DVRViewer.exe
Type: Application, 455 KB
From: 192.168.10.10
Run
Save
Cancel
While files from the Internet can be useful, this file type can potentially harm your computer. If you do not trust the source, do not run or save this software. What's the risk?

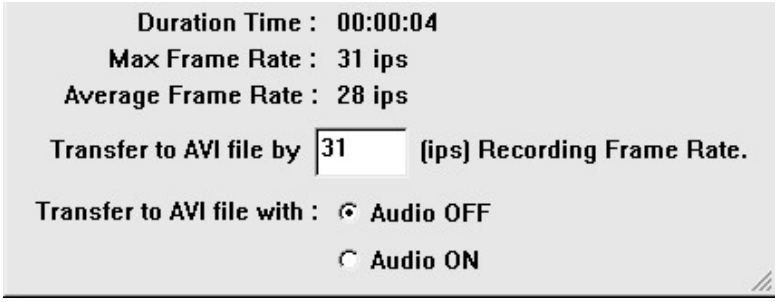
3. Open the DVRViewer.exe for loading the archived EDR MPEG4 Files (.arv)



Detailed explanation of DVRViewer is as follows:

i. **Load File**: to load the archived EDR MPEG4 Files (.arv).
ii. **Stop**: to stop playing ".arv" file.
iii. **Play**: to play ".arv" file.
iv. **<<Step**: step backward of the playing file.
v. **Pause**: to pause playing.
vi. **Step>>**: step forward of the playing file.
vii. **Capture**: to capture the playing image as ".jpg" file.
viii. **Save to Avi**: to save the archived EDR MPEG4 File as ".AVI" file.

Note:
(1)The recording frame rate will be automatically calculated. It is suggested to use the calculated Recording Frame Rate, although it is possible to change this value.
(2) If you wish to save the audio recorded, please select **Audio ON**, so that the audio can be transferred to AVI file. Otherwise, select **Audio OFF**, then the audio recorded will not be transferred to AVI file.


Duration Time : 00:00:04
Max Frame Rate : 31 ips
Average Frame Rate : 28 ips
Transfer to AVI file by 31 (ips) Recording Frame Rate.
Transfer to AVI file with :
Audio OFF
Audio ON

Note: If you are unable to play “AVI” file downloaded from “DVRViewer”, your PC is required to install “CODEC”, please go to the following URL: http://www.cole2k.net/ and click “Advanced”, then “Download Direct” for downloading “Cole2k.Media.-.Codec.Pack.V6.0.6.-Advanced-.Setup.exe.” This will enable you to play “AVI” file successfully.

Appendix

A

Appendix A: Remote Control

The remote controller (RC-200, Figure 1) is an accessory to enhance the handy operations of the DVR. You can perform all the settings and operations by the remote controller. The effective distance is up to 10 meters without any obstacle. The keypad functions are same as the front panel key button of the DVR.

There are some replacement keys for JOG and SHUTTLE, definitions are:

JOG ▶ : Same as turning the JOG clockwise.

JOG ◀ : Same as turning the JOG counter-clockwise.

SHUTTLE ▶▶

1: fast forward 2X or slow forward 1/2X.

2: fast forward 4X or slow forward 1/4X.

3: fast forward 8X or slow forward 1/8X.

4: fast forward 16X or slow forward 1/10X.

5: fast forward 32X or slow forward 1/16X.

6: fast forward 600X or slow forward 1/32X.

SHUTTLE ◀◀

1: fast rewind 2X or slow rewind 1/2X.

2: fast rewind 4X or slow rewind 1/4X.

3: fast rewind 8X or slow rewind 1/8X.

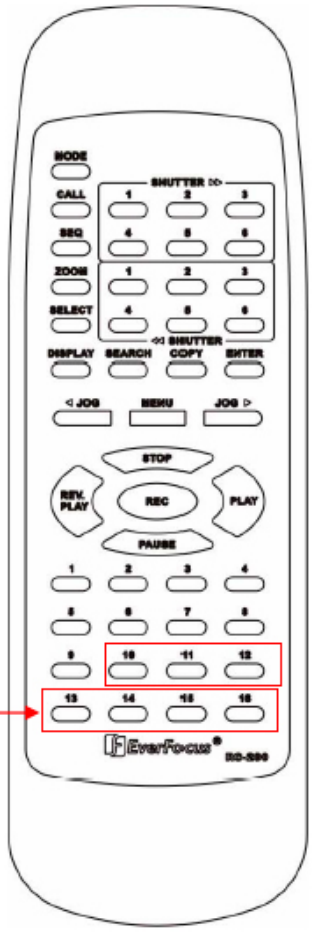
4: fast rewind 16X or slow rewind 1/10X.

5: fast rewind 32X or slow rewind 1/16X.

6: fast rewind 600X or slow rewind 1/32X.

Note: The channel keys #10~16 are not available.

Reserved only for 16 CH DVR.



Appendix

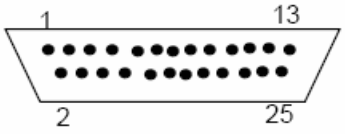
B

Appendix B: Alarm Board Configuration

EDVR16D1/F1, EDVR16D2/F2, EDVR9D1/F1, EDVR4D1/F1 models:

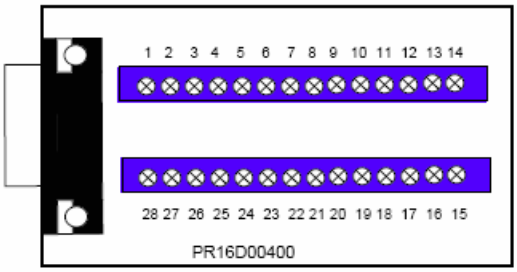
The alarm connector, **Figure 1**, is used to provide one sensor alarm input for each camera input.
For easy operation, an alarm extension board, **Figure 2**, is provided to connect to the alarm connector.

Each alarm input requires two wires, one wire connects to the desired alarm input pin, the second wire connects to the ground.The alarm signal assignment is shown at the following.



<Figure 1>

D-SUB 25 pin female connector (DVR)



<Figure 2>

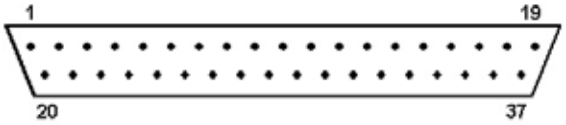
PR16D00400 Alarm extension board (HOST).

DVR	
PIN #	NAME
1	GND
2	ALM 1
3	ALM 2
4	ALM 3
5	ALM 4
6	ALM 5
7	ALM 6
8	ALM 7
9	ALM 8
10	ALM 9
11	RESERVED
12	RESERVED
13	RESERVED
14	RESERVED
15	RESERVED
16	RESERVED
17	RESERVED
18	ALMRSTO
19	REC
20	GIN10
21	DISKFULL
22	GO1
23	ALM-N.C
24	ALM-N.O
25	ALM-COM

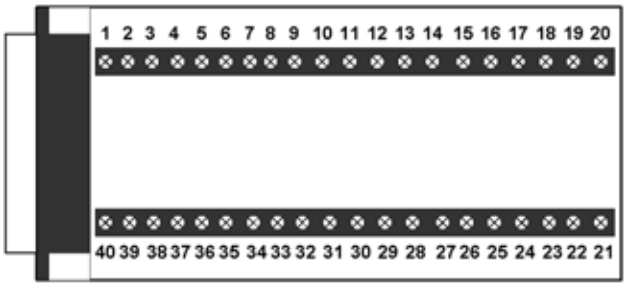
HOST	
PIN #	NAME
1	GND
2	ALM 1
3	ALM 2
4	ALM 3
5	ALM 4
6	ALM 5
7	ALM 6
8	GND
9	ALM 7
10	ALM 8
11	ALM 9
12	ALM10
13	ALM 11
14	ALM 12
15	ALM 13
16	ALM 14
17	ALM 15
18	ALM 16
19	ALMRST
20	REC-IN
21	GND
22	SPARE-IN
23	DISKFULL
24	SPARE-OUT
25	ALM-N.C
26	ALM-N.O
27	ALM-COM
28	GND

ALM10~ALM16 are reserved only for 16 CH DVR.

EDVR16D3 model:



<Figure 1>
D-SUB 25 pin female connector (DVR)



<Figure 2>
P164D00100 Alarm extension board (HOST)

DVR	
PIN #	NAME
1	GND
2	ALMIN 1
3	ALMIN 2
4	ALMIN 3
5	ALMIN 4
6	ALMIN 5
7	ALMIN 6
8	ALMIN 7
9	ALMIN 8
10	ALMIN 9
11	ALMIN 10
12	ALMIN 11
13	ALMIN 12
14	ALMIN 13
15	ALMIN 14
16	ALMIN 15
17	ALMIN 16
18	GND
19	GND
20	ALM_NC1
21	ALM_NO1
22	ALM_COM1
23	ALM_NC2
24	ALM_NO2
25	ALM_COM2
26	ALM_NC3
27	ALM_NO3
28	ALM_COM3
29	ALM_NC4
30	ALM_NO4
31	ALM_COM4
32	ALMRST
33	REC_IN
34	SPARE_IN
35	DISK_FULL
36	SPARE_OUT
37	GND

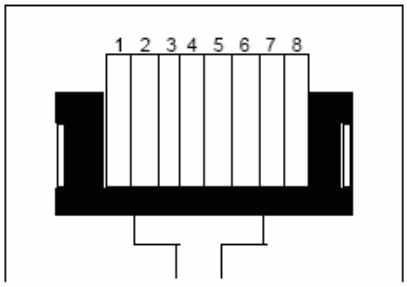
HOST	
PIN #	NAME
1	GND
2	ALMIN 1
3	ALMIN 2
4	ALMIN 3
5	ALMIN 4
6	ALMIN 5
7	GND
8	ALMIN 6
9	ALMIN 7
10	ALMIN 8
11	ALMIN 9
12	ALMIN 10
13	GND
14	ALMIN 11
15	ALMIN 12
16	ALMIN 13
17	ALMIN 14
18	ALMIN 15
19	ALMIN 16
20	GND
21	GND
22	ALM_NC1
23	ALM_NO1
24	ALM_COM1
25	ALM_NC2
26	ALM_NO2
27	ALM_COM2
28	GND
29	ALM_NC3
30	ALM_NO3
31	ALM_COM3
32	ALM_NC4
33	ALM_NO4
34	ALM_COM4
35	GND
36	ALMRST
37	REC_IN
38	SPARE_IN
39	DISK_FULL
40	SPARE_OUT

Appendix

C

Appendix C: RJ45 (RS485) Pin Assignment

There are two RJ-45 (RS-485) connectors on the back panel of the DVR. Please refer the following pin assignment for application.



PIN #	NAME
1	GND
2	NC
3	RX
4	NC
5	NC
6	TX
7	NC
8	NC

Appendix

D

Appendix D: Lapse Mode Recording Table

Resolution: 720 x 480
System storage: 250 GB

		Video Source	
		Simple:	Complex:
Average size per image	Lower:	8.04KB	12.33KB
	Low:	8.42KB	13.7KB
	Basic:	10.15KB	16.72KB
	Standard:	11.86KB	19.56KB
	High:	14.72KB	24.63KB
	Superior:	18.60KB	30.05KB

Terms of Use

The HDD size required in your DVR may vary from this calculated test result under some conditions. Total storage capacity may vary depending on complexity of video scenes, DVR specifications and features used on the actual installation sites. Test results and information obtained from these tables are furnished for informational use only. It is user's responsibility to test and allocate appropriate HDD size for his/her DVR systems.

EDVR16D1/16F1/9D1/9F1/4D1/4F1 model

NTSC Unit: Hour

Recording Speed (IPS)	PICTURE QUALITY											
	LOWER		LOW		BASIC		STANDARD		HIGH		SUPERIOR	
	simple	complex	simple	complex	simple	complex	simple	complex	simple	complex	simple	complex
	8.04	12.33	8.42	13.7	10.15	16.72	11.86	19.56	14.72	24.63	18.6	30.05
30	287.9	187.74	274.92	168.96	228.06	138.45	195.18	118.34	157.26	93.98	124.45	77.03
15	575.8	375.48	549.84	337.93	456.12	276.89	390.36	236.69	314.51	187.97	248.90	154.06
10	863.7	563.22	824.76	506.89	684.18	415.34	585.53	355.03	471.77	281.95	373.36	231.10
8	1080	704.02	1030.94	633.62	855.23	519.17	731.92	443.79	589.71	352.44	466.70	288.87
4	2159	1408.04	2061.89	1267.23	1710.45	1038.34	1463.84	887.58	1179.42	704.88	933.39	577.74

PAL Unit: Hour

Recording Speed (IPS)	PICTURE QUALITY											
	LOWER		LOW		BASIC		STANDARD		HIGH		SUPERIOR	
	simple	complex	simple	complex	simple	complex	simple	complex	simple	complex	simple	complex
	8.04	12.33	8.42	13.7	10.15	16.72	11.86	19.56	14.72	24.63	18.6	30.05
25	345.5	225.29	329.90	202.76	273.67	166.14	234.21	142.01	188.71	112.78	149.34	92.44
15	575.8	375.48	549.84	337.93	456.12	276.89	390.36	236.69	314.51	187.97	248.90	154.06
10	863.7	563.22	824.76	506.89	684.18	415.34	585.53	355.03	471.77	281.95	373.36	231.10
8	1080	704.02	1030.94	633.62	855.23	519.17	731.92	443.79	589.71	352.44	466.70	288.87
4	2159	1408.04	2061.89	1267.23	1710.45	1038.34	1463.84	887.58	1179.42	704.88	933.39	577.74

EDVR16D2/ 16F2 model

NTSC Unit: Hour

Recording Speed (IPS)	PICTURE QUALITY											
	LOWER		LOW		BASIC		STANDARD		HIGH		SUPERIOR	
	simple	complex	simple	complex	simple	complex	simple	complex	simple	complex	simple	complex
	8.04	12.33	8.42	13.7	10.15	16.72	11.86	19.56	14.72	24.63	18.6	30.05
60	143.96	93.87	137.46	84.48	114.03	69.22	97.59	59.17	78.63	46.99	62.23	38.52
48	179.95	117.34	171.82	105.60	142.54	86.53	121.99	73.97	98.29	58.74	77.78	48.15
40	215.93	140.80	206.19	126.72	171.05	103.83	146.38	88.76	117.94	70.49	93.34	57.77
32	269.92	176.00	257.74	158.40	213.81	129.79	182.98	110.95	147.43	88.11	116.67	72.22
24	359.89	234.67	343.65	211.21	285.08	173.06	243.97	147.93	196.57	117.48	155.57	96.29
16	539.84	352.01	515.47	316.81	427.61	259.59	365.96	221.90	294.86	176.22	233.35	144.44

PAL Unit: Hour

Recording Speed (IPS)	PICTURE QUALITY											
	LOWER		LOW		BASIC		STANDARD		HIGH		SUPERIOR	
	simple	complex	simple	complex	simple	complex	simple	complex	simple	complex	simple	complex
	8.04	12.33	8.42	13.7	10.15	16.72	11.86	19.56	14.72	24.63	18.6	30.05
50	172.75	112.64	164.95	101.38	136.84	83.07	117.11	71.01	94.35	56.39	74.67	46.22
40	215.93	140.80	206.19	126.72	171.05	103.83	146.38	88.76	117.94	70.49	93.34	57.77
32	269.92	176.00	257.74	158.40	213.81	129.79	182.98	110.95	147.43	88.11	116.67	72.22
24	359.89	234.67	343.65	211.21	285.08	173.06	243.97	147.93	196.57	117.48	155.57	96.29
16	539.84	352.01	515.47	316.81	427.61	259.59	365.96	221.90	294.86	176.22	233.35	144.44

EDVR16D3 model

NTSC Unit: Hour

Recording Speed (IPS)	PICTURE QUALITY											
	LOWER		LOW		BASIC		STANDARD		HIGH		SUPERIOR	
	simple	complex	simple	complex	simple	complex	simple	complex	simple	complex	simple	complex
	8.04	12.33	8.42	13.7	10.15	16.72	11.86	19.56	14.72	24.63	18.6	30.05
120	71.978	46.93	68.73	42.24	57.02	34.61	48.79	29.59	39.31	23.50	31.11	19.26
96	89.973	58.67	85.91	52.80	71.27	43.26	60.99	36.98	49.14	29.37	38.89	24.07
80	107.97	70.40	103.09	63.36	85.52	51.92	73.19	44.38	58.97	35.24	46.67	28.89
64	134.96	88.00	128.87	79.20	106.90	64.90	91.49	55.47	73.71	44.05	58.34	36.11
48	179.95	117.34	171.82	105.60	142.54	86.53	121.99	73.97	98.29	58.74	77.78	48.15
32	269.92	176.00	257.74	158.40	213.81	129.79	182.98	110.95	147.43	88.11	116.67	72.22
16	539.84	352.01	515.47	316.81	427.61	259.59	365.96	221.90	294.86	176.22	233.35	144.44

PAL Unit: Hour

Recording Speed (IPS)	PICTURE QUALITY											
	LOWER		LOW		BASIC		STANDARD		HIGH		SUPERIOR	
	simple	complex	simple	complex	simple	complex	simple	complex	simple	complex	simple	complex
	8.04	12.33	8.42	13.7	10.15	16.72	11.86	19.56	14.72	24.63	18.6	30.05
100	86.374	56.32	82.48	50.69	68.42	41.53	58.55	35.50	47.18	28.20	37.34	23.11
80	107.97	70.40	103.09	63.36	85.52	51.92	73.19	44.38	58.97	35.24	46.67	28.89
64	134.96	88.00	128.87	79.20	106.90	64.90	91.49	55.47	73.71	44.05	58.34	36.11
48	179.95	117.34	171.82	105.60	142.54	86.53	121.99	73.97	98.29	58.74	77.78	48.15
32	269.92	176.00	257.74	158.40	213.81	129.79	182.98	110.95	147.43	88.11	116.67	72.22
16	539.84	352.01	515.47	316.81	427.61	259.59	365.96	221.90	294.86	176.22	233.35	144.44

Troubleshooting

If you have difficulty operating your system, run through the following checklist to see if you can solve the problem.

The DVR will not go into record mode?

Make sure the HDD is locked in with the keys. Also check to make sure the hard drives are set to C.S. (Cable Select). A diagram located on the Hard Drive Label will show you how to set the drive to C.S.

The DVR displays no picture?

First question you should ask yourself is the equipment wired properly. Please see your installation manual for help.

The second question to ask yourself, do all the wires used work properly.

The next step is to verify the recorder is getting the correct amount of power.

There is no display coming from one of the channels on the DVR?

The first step is to verify is the problem coming from the recorder or the camera.

Simply take a working camera and plug it into the port that seems to not be working. If you see a picture this means the problem is coming from the camera.

I cannot connect to the recorder via the internet?

1. The first thing to check is does your internet provider block any ports.

2. Are you using the IP address from the Internet Service provider?

3. If you are using a router are the ports in your router opened?
   (**NOTE:** Please be sure that HTTP port, Control port, Data port are open. Please refer to “Network Setup Menu” section for port settings. For example, HTTP port: 00080, Control port: 01600, Data port: 37260, the last digit +1 which is 37261, +2 which is 37262 and +3 which is 37263.)

4. If you are using Windows XP please update the Java Virtual Machine. This can be done by going to http://java.sun.com and downloading the file called

JavaVM.

If you have a Dynamic IP address from your Internet Service Provider.

Dynamic IP addresses can cause conflicts when trying to connect to DVR(s) on a high speed internet connection. With new router technology (DDNS), it allows you to overcome this problem. DDNS lets you assign a fixed host and domain name to a dynamic Internet IP address. It is useful when you are hosting your own DVR, website, FTP server, or other server behind the Router. Before using this feature, you need to sign up for DDNS service at *www.dyndns.org or www.tzo.com*. (Preferred routers: Linksys BEFSR41 V3 or DLINK DI624 or any router that offers DDNS.

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